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THE HAND IN GENERAL PRACTICE.[1]

By DONALD A. CAMERON, M.B., Ch.M. (Sydney),

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AFTER five years or more most of us present in this room tonight passed our final examination and became registered medical practitioners. We then spent one or two years as resident medical officers at large city hospitals. In spite of this training the great majority of us here present did not possess on the day we started private practice the requisite knowledge necessary to treat the common disabilities of the hand. This knowledge was acquired later in the school of bitter experience. That this should be so I consider a stigma against the present day methods of teaching anatomy and surgery to students and, I might also add, of examining students in these subjects. It is pleasant reading to find that there are some anatomists who protest against the present day method of teaching and examining the subject. The following two quotations from that delightful little book, "The Principles of Anatomy as Seen in the Hand," by Professor Wood Jones, of Adelaide, sums up the position to a nicety:

> The author regards it as one of the defects of the present day medical education that the student may occupy a period of fifteen months with good and honest work acquiring as sound a knowledge of the general structure of the human body as can reasonably be gained in that short time and at the end of this apprenticeship meet an examiner who tests this knowledge in twenty minutes spent in haggling about the details of a carpal bone.

And again:

> The author regards knowledge as to the right or left sidedness of individual carpal bones as a superfluous acquirement on the part of a student who is destined to heal the sick, and one that is retained in the memory only at the expense of some more really useful knowledge.

Personally I consider anatomy should not be a subject for memorizing useless facts which are forgotten as soon as examinations are over.

The same author has truly said that "there are very few parts of the human body in health or in disease that repay observation better than the hand."

In an evening like this it is not possible to traverse the entire subject; a discussion on ana-

[1] Read at a meeting of the Queensland Branch of the British Medical Association on April 3, 1925.

tomical principles alone would occupy the whole evening. I propose, however, to bring forward a few common disabilities frequently seen in general practice, others will be mentioned by some of my colleagues. Without giving detailed histories I will speak tonight of types culled from the pages of my clinical notes.

Infection of the Terminal Phalanx: A Felon.

Most of you have pricked with a needle or thorn the terminal phalanx of one of your fingers. Some have escaped any trouble in the way of acute infection, others have not been so fortunate. Often an infective process sets up in the pulp, deep down beneath the skin. A stinging pain commences, followed later by throbbing, so that you cannot rest or sleep. Then the distal portion of the finger becomes red, swollen and tender. If it is not treated surgically, it may become indurated, passing on to a boggy mass and later to fluctuant condition. The pain then often disappears. If you recollect your anatomy, you will remember that the tendon of the *flexor profundus digitorum* is inserted into the base of the distal phalanx and also that there is no outlet for pus situated in the terminal pulp part of the finger, consequently the pressure interferes with the blood supply of the diaphysis, resulting in early necrosis of this portion of the bone, while the epiphysis may live, since its blood supply comes off from the arteries before they enter the closed space of the terminal phalanx. Should pus form, early incision is necessary to save the diaphysis and it should be fairly free and placed to one side of the pulp; care must be taken not to continue the incision too far down the proximal end of the finger, otherwise the joint may be opened. Remember that the joint is situated slightly beyond the transverse distal skin lines of the finger.

Generally the patient comes too late to have an early incision into a commencing felon, so that when you make your incision, you find the diaphysis necrosed. In these cases after a large incision has been made, your surgical procedure should be conservative as the diaphysis often recovers to some extent, consequently forcible curetting is contra-indicated.

With regard to treatment of felons, there are several points I would like to emphasize. First, the patient should have a general anæsthetic and usually nitrous oxide or ethyl chloride provides a long enough anæsthesia. I am constantly seeing trouble result from men not having a sufficiently large incision. The stab incision, a minute hole, through which a bead of pus forces its way up, may give temporary pleasure and satisfaction to the operator. It is not, however, a sound surgical procedure and the results are often disastrous. I have seen several such results lately. If a free, early, well placed incision down to the bone is made, the diaphysis and whole finger tip may be saved. Every effort should be made to save the finger tips, especially of the thumb and index finger. It is wonderful to see how useful the terminal phalanx may become later on owing to the regeneration of bone in eight to twelve months' time.

Lymphangitis.

Instead of an infection in the deep tissues of the terminal phalanx, you may have an infection in the lymphatics just under the skin. A lymphangitis is set up, the whole finger swells and perhaps red streaks are visible. Œdema is more general and tenderness more evident along the finger than in a felon, even though the point of maximum tenderness is at the terminal phalanx. The diagnosis between a felon and a lymphangitis of the terminal phalanx is very important as the treatment is different. In a felon an immediate incision into the infected area is absolutely necessary, while in lymphangitis an incision is not only unnecessary, but harmful. A lymphangitis should never be incised in the early stages simply on account of swelling, as the tissues of the finger may become secondarily infected with other organisms from the skin. If a bead of pus forms at the site of inoculation, it should be opened, but no other incisions made up the finger. I think these facts are often overlooked. A superficial lymphangitis generally subsides rapidly; sometimes it spreads rapidly and the whole arm becomes swollen; single glands and the epitrochlear, axillary and subclavian groups are often enlarged and painful. The deep lpymphatics which follow the blood vessels, are also often infected. Opinions differ considerably as to the correct methods of treatment of lymphatic infection of the hand and arm. The trend of opinion amongst thoughtful and observant surgeons is to adopt a position of masterly inactivity in the early stages. Hot fomentations should be applied first of all. The object of moist heat is to increase the blood in the parts by dilatation of the capillaries and so to favour the walling off of the infection by the phagocytes and round-celled infiltration. The temperature of the foment should not be greater than can be easily borne by the nurse's forearm, not by her hand, because as you all know nurses can often place their hands into very hot water. Blistering of the skin by excessive heat does harm. So far I have never used a ligature applied round the upper arm to prevent the excessive absorption of poison and overdose of bacilli into the whole system, while time is given for antibodies to be formed so as to be able to deal with the toxæmia. Recently this method of treatment has been advocated and carried out in severe cases. The principle appears to be correct and I would invite the opinions of the physicians and pathologists as to its efficacy from a scientific point of view. A Martin's elastic bandage ligature five centimetres in width is generally used. I should think the method could be well carried out with a sphygmomanometer arm piece, an instrument that is becoming useful in many ways, such as for the purpose of finding veins for blood transfusion and intravenous injections. If a definite focus of pus forms at the site of inoculation, it should be opened and if other foci form up the arm, they should be opened. Numerous incisions should not be made indiscriminately, simply because inflamed lymphatic vessels and glands are present. One must bear in

mind the course of the blood vessels, as suppuration may take place in the deep lymphatics and also require opening. I must condemn the radical dissecting out of infected lymphatic glands in an acute infection, as I look upon them as a line of defence against the infection. If the glands suppurate, they should only be opened and pus let out until acute symptoms disappear. As regards general treatment rest for the limb and for the whole body and mind are very important. The patient's strength should be conserved in every possible way, especially with light and easily digested food. The secretions should be attended to on general principles. If the microorganisms can be typed, I am a great believer in large doses of serum in some streptococcal cases. The main principle of treatment in severe cases is to keep up the patient's strength. Blood transfusion is often helpful.

I expect some opposition to-night to my views as regards incisions in lymphatic cases, as I know many of my friends are keen on numerous early incisions in acute lymphangitis. I would like to point out, however, that a general anæsthetic has to be given, the patient's resistance is consequently lowered and the blood is not so able to deal with the infection. An incision that does not let out pus, does harm by leaving a large surface for immediate absorption of extra large doses of toxins and bacteria before the blood is ready to cope with this extra load. Experimenters have shown that incisions in cases in which pus was not evacuated, are generally followed by a chill and rise of temperature within a short time, indicating increased absorption of toxins.

As far back as 1871 Dr. Oliver Wendell Holmes said:

> There is an irresistible tendency to associate the thing done and the improvement that follows as cause and effect. This is the great source of fallacy in medical practice, but the physician has some chance of correcting his hasty inference. He thinks his prescription cured a single case of a particular complaint, he tries it in twenty similar cases without effect and sets down the first as probably nothing more than a coincidence.

I should like to replace the word "prescription" in the above quotation by "incision." Care, thoughtfulness and observation by surgeons have decreased the number of needless and harmful incisions in other parts of the body. Perhaps if we observe carefully and draw correct conclusions from many patients infected with this dreaded condition, we may achieve a similar result with benefit to our patients.

Acute Suppurative Teno-Synovitis.

Recently a man came into my surgery with the whole index finger uniformly enlarged; it was exceedingly tender on pressure over the whole of the flexor tendon sheath, especially so over the head of the metacarpal bone. He had great tenderness on extending his finger. I could not obtain a history of injury, still one may have occurred. Patients often forget slight injuries that have happened a few days previously. I diagnosed an acute suppurative teno-synovitis. He was given a general anæsthetic. A long lateral incision was made through the skin and the sheath of the tendon opened from the side. He eventually obtained a perfectly useful finger. I can remember several catastrophes in my early days of practice resulting from the fact that the condition was not diagnosed quickly and when it was diagnosed, from neglect to insist on the patient coming in to hospital and having the finger opened under a general anæsthetic. Diagnosis of acute suppurative teno-synovitis is not always easy in the early stages. Once diagnosed, however, the patient should be sent into hospital and under a general anæsthetic the finger should be opened carefully and deliberately by lateral incision. Let there be no stab incision without an anæsthetic. If the suppuration has spread up the finger into the palm, continue the same incision up the hand. The operation should be carried out in a bloodless field by the use of an Esmarch bandage. Lateral incisions are always preferable to those down the centre of the finger and give better functional after results. If the suppurative process has spread up the hand into the fascial planes or into the ulnar and radial bursal sacs, the same skin incision can always be extended to reach the deeper planes. If necessary the anterior annular ligament may be divided. If the upper ends of either the radial or ulnar bursal sacs require opening, this must always be done through a lateral incision above the wrist. I am convinced that the less the surgeon uses drains in the hand, the better final results will be obtained, provided the primary incisions are long enough and well planned. If a drain is considered advisable, rubber tubing should not be used, because it increases necrosis in the tendons and other tissues. Rubber tissue only must be used and the drain should be removed in forty-eight hours as a rule. After treatment consists of rest and moist dressings or saline baths in the early stages. The tissues, however, should not be allowed to become too sodden. I find great benefit from exposure to the air and sunlight at a later stage without any dressing over the wound except a thin layer of gauze or mosquito net raised so as to keep flies off. As improvement takes place, early active movements should be encouraged, but no other person to carry out passive movements may be employed. The only passive movements I like to see are those performed by the patients sound hand; in this way active and passive movements are obtained at the same time. Passive movements except by the patient instinctively set the muscles on guard.

Staphylococcal Infection.

I have recently had under my care another type of acute infective process of the hand. As the diagnosis and treatment are important I will give a short history of the case.

S.C., male, *ætatis* forty-one years, came to my surgery on February 9, 1925, with a history of having fallen on his right hand on January 30, 1925, while out in the country crossing a railway line. He had slight abrasions of the hand, very minor ones. Two days later he noticed that the base of the right thumb was swollen. After another two days the inflammation had disappeared and

then gradually came up on the back of the hand and increased very much. He saw the doctor on February 9, in a country town who informed him that it was necesary for the hand to be opened. His home being in Brisbane, he decided to come to the city and arrived about seven o'clock in the evening.

On examination I found the whole hand very œdematous, pitting on pressure, very tender on the proximal phalanx of the right thumb. He was unable to straighten his fingers owing to the pain. His temperature was 37.1°C. I sent him into hospitad for probable operation on the next day, though the absence of a considerable rise of temperature made me suspicious that there might be a fracture in the base of the thumb or in the carpal bones. On February 10, 1925, the radiographer reported that there was a little periostitis at the base of the second metacarpal bone. The joint space of the second intermetacarpal with the third was separated as a result of fluid. He could detect no evidence of fracture in any of the small bones of the hand. The pain in the hand was severe, but moved about from place to place during the next few days and minute blebs came up on the skin over the head of the second metacarpal bone on the dorsal aspect. The pain was relieved by hot baths. There was some swelling up the forearm detected on comparing it with the left hand and forearm. On February 14, 1925, I asked your President, Dr. McDowall, whom I have found very useful to me in this kind of case, to see the man in consultation, as I began to think I had another case of blastomycoses, several of which he had diagnosed for me in the past. The hand had meanwhile started to improve. We both came to the conclusion that it was a staphylococcal infection and though no culture was made in this case, I am positive the clinical diagnosis was correct. Ichthyol dressings were applied. The patient quickly improved and on February 21, 1925, he left hospital well on the way to recovery.

This is another type of case fairly often seen, where treatment by incision is harmful as the deeper fascial planes and even the synovial sheaths may become infected by the operation. These cases of acute and sub-acute staphylococcal infection and also cases of blastomycoses can only be definitely diagnosed by the microscope. The surgeon must be on the outlook for them as they are fairly common and if he keeps his eyes open, a correct clinical diagnosis can generally be made.

Paronychia.

Another common infection of the terminal phalanx and one that often causes us anxiety in its treatment, is acute and sub-acute paronychia. I have recently attended a patient with five fingers infected at the same time. Infection commences at the side of the nail in the epithelial tissue, where there is redness and swelling and a little pain. Soon the process starts to spread round the base of the nail and pus developes in a bead or two; unless stopped by treatment the infection will involve the whole of the area under the eponychium and beneath the nail base. In my opinion the only correct treatment in this condition is some surgical procedure under a general anæsthetic or block local anæsthesia. I have had some good results by numerous small incisions vertically to the eponychium, but I generally find that it is necessary to make a longitudinal incision along the finger outside the edge of the nail and not involving the nail, this incision being prolonged proximally beyond the base of the nail. The eponychium is then pushed gently back with gauze and the scissors inserted under the detached edge of the nail which is cut off. This gives free drainage. If the infection has spread round the whole nail base, another incision should be placed on the opposite side of the finger nail and also extended back beyond the base of the nail; then the whole eponoychium is turned back and the basal part of the nail is removed. I find a dressing of gauze soaked in castor oil or vaseline an excellent one for these cases. Exposure to the sun's rays every day for a period hastens convalescence, a method I constantly employ for all suppurating wounds. Chronic infections require the same surgical treatment, but the infective organism must be sought and discovered. You often find a ringworm fungus as the cause. X-rays act well in cases due to ringworm. A chronic type found in women who always have their hands in water, such as cooks and washerwomen, clears up if the hands are kept out of the water for some weeks.

Dupuytren's Contractions.

A man, aged fifty-two years, overseer on a station, about seven years ago noticed a lump on the tendon of his right ring and little fingers. The fingers started to contract gradually and two years ago rapidly. When seen by me they were flexed into the palm. The left hand also had definite contraction of the ring finger. There was a typical picture of Dupuytren's contraction in both hands. The patient's right hand was operated upon with great success and he now desires his left hand to be treated similarly.

These cases are very common and very disabling to the individual. I am not convinced that any treatment other than operation stays the course of the disease, though you are recommended to carry out massage, hot air, splinting and so forth. I find the condition gradually progresses; perhaps patients will not carry out instructions fully. As you all know, the position of the fingers is brought about by progressive contraction of the palmar fascia. Various operative procedures have been advocated. The only one that I consider truly effective, is complete removal of the palmar fascia. A V-shaped incision with the apex upwards is made in the palm and the skin flaps dissected widely off the palmar fascia, by no means always an easy task. The palmar fascia is then completely removed with all its ramifications, otherwise a cure will not be accomplished. I have never seen a case in which it was necessary to lengthen the tendons, though Calot advises it in his description of the operation. In the after treatment early active movements are advisable and a splint should be placed on the dorsal aspect of the hand and arm during the night.

Ganglion of the Hand and Wrist.

A girl, aged twenty-six, evidently having faith in her medical attendant, came to me for the third time with the same complaint uncured by the former operations. She had a ganglion of the wrist. On the first occasion I pressed a coin on the tumour and with a blow of my fist dispersed it, in the twinkling of an eye, after the good old orthodox fashion of the older generation of medical practitioners. After many days it returned, so the second time I dissected it out under a local anæsthetic. A year later it returned again, so I asked for mercy and one more chance. Under a general anæsthetic I dissected it out carefully right down between the tendons and liga-

tured the slender pedicle at the joint. Whether by good fortune or not I seem to have effected a cure this time.

As far as I know the exact origin of a ganglion is a matter of dispute. Perhaps I may be enlightened otherwise tonight. I do know, however, that a ganglion of the wrist tends to increase in size in people who have to use their wrists at their work. The same obtains in regard to a ganglion on the tendons on the back of the hands. Both can be very painful and interfere with the patient's work; occasionally there is no disability at all. I have never tried injecting a ganglion with irritant fluids in order to obliterate the sacs.

Carbuncle.

I have seen a few cases of carbuncles on the back of the hand and in this situation it is a very serious condition owing to the mode of spread and the destruction of skin that takes place. It is only in recent years that I have appreciated the correct mode of treatment. A crucial incision should be made as we have been taught in the past, but I am doubtful if a curette should be used. The primary incisions should be carried right through the area of the carbuncle and then two more under-cutting incisions parallel to the skin and near to the deep fascia; these also should be carried right through the area of induration. Gauze saturated with castor oil or vaseline should be inserted to keep the flaps raised and allow of drainage. Of late years I have been a great advocate for the use of the Pacquelin cautery in the treatment of large carbuncles at the back of the neck and other situations about the body, but so far I have never used or seen it used on the back of the hand. I know of no more effective and safer method of treating enormous carbuncles at the back of the neck than that of the Pacquelin cautery scientifically applied. Carbuncles should always be treated under a general anæsthetic and sufficiently opened.

Splinter Under the Thumb Nail.

Of the common disabilities of the hand this one is perhaps too paltry to bring forward. A girl, aged twenty-four years, came to me with a large splinter embedded under the nail of the left forefinger; however, as ineffectual efforts to remove it had taken place the previous day in the surgery of some general practitioner, it is as well to bring the case forward. The end of the splinter was well below the free edge of the nail owing to efforts to abstract the offender, with ordinary dissecting forceps and a knife. Block anæsthesia with a local anæsthetic and the use of a proper pair of splinter-forceps soon resulted in the removal of the splinter. A slit along the nail provided drainage which was needful as there was a bead of pus present. Evidently the splinter had been *in situ* for some days.

Every doctor in general practice should have a pair of splinter-forceps in his surgery.

Dislocations.

Dislocation of joints of the hand, especially of the distal phalanges of the fingers, I find common. It is strange how often a patient comes to you with an unreduced dislocation of this joint of weeks' standing and he has never consulted a doctor. I have seen several in men from knocks from a cricket ball on the point of the finger. In recent cases reduction is easy, not so if seen weeks after the injury. A fairly common dislocation that is difficult to reduce, is the backward one at the metacarpo-phalangeal joint of the thumb. I cannot remember seeing an anterior dislocation at this joint. In the posterior dislocation the palmar or glenoid ligament is torn from its loose metacarpal attachment, the phalanx carrying with it the glenoid ligament and sesamoid bones. The head of the metacarpal passes forward between the two heads of the *flexor brevis pollicis* and the tendon of the *flexor longus pollicis* slips to the ulnar side. The base of the phalanx passes on to the dorsum of the metacarpal bone, where it is held by the contraction of the muscles, standing up at right angles to the metacarpal, while the distal phalanx is flexed. To reduce the dislocation the patient should be anæsthetized to relax the muscles. The metacarpal should be flexed and adducted into the palm with one hand, while the other hand flexes the distal phalanx and hyperextends the proximal phalanx and pushes the base of it along the metacarpal bone towards and on to the head of the metacarpal. When the base of the phalanx is well on to the head or partly beyond it, flexion should be attempted. Extension alone is seldom successful in the reduction of this dislocation and I am of opinion it is only successful in an incomplete dislocation. Scudder in his book says the difficulty in reduction is due to the head of the metacarpal being grasped between the heads of the *flexor brevis pollicis* and the *flexor longus pollicis*. Personally I think it is always due to the palmar or glenoid ligament and sesamoid bones being interplaced between the two bones.

If this method fails to bring about a reduction, operation will be necessary and two methods are available. One is by passing a tenotomy knife subcutaneously through the back of the joint and dividing the interposed glenoid ligaments longitudinally and then slipping the head through the opening between the sesamoid bones. The second method of reduction is by an open radial incision with free exposure and the establishment of normal relations of the parts. If this is found impossible in long-standing cases, the head of the metacarpal bone should be excised. I have seen several well-known surgeons in trouble with this dislocation when of some days' duration. The principle of manipulative reduction is really what should always be carried out in all dislocations of this type of joint, the idea being to dislodge any intervening substance. As regards the after treatment early, gentle, active movements and massage are advisable, but I am opposed to passive movements. I think more harm than good is being done by passive movement in and around Brisbane.

Conclusion.

I find I have notes on numerous other disabilities of the hand. Time will not permit me to place them before you for discussion. I have arranged with some of my colleagues to speak on disabilities

omitted from my paper and with the X-ray experts to show pictures bearing on the subjects of the evening. While in consultation with a suburban practitioner early in February our conversation reverted to our meetings in this room. He said to me why not give us a paper on some subject connected with our every-day work, "our bread-and-butter work," as he termed it. I hope that I have "filled the bill."

AN ATTEMPT TO INTEREST THOSE ENGAGED IN GENERAL PRACTICE IN TWO OR THREE OPHTHALMOLOGICAL MATTERS.[1]

By J. Lockhart Gibson, M.D. (Edinburgh), M.R.C.S. (England),
Brisbane.

When first invited by your Honorary Secretary to address you this evening, I hesitated between saying a very little about a number of things or saying more about a few. The hesitation disappeared when I began to collect my thoughts on paper, for I found that instead of there being so little ophthalmology which might be expected to interest those engaged in general work, there is so much that the difficulty will be to say enough on any part of it in the time at my disposal. This, I confess, is my own attitude. If it is not yours at the end of the evening, my method of treating the subjects undertaken will be to blame.

I propose to limit myself to three subjects: Interstitial keratitis, a few remarks on squint and refraction, three varieties of cataract.

Interstitial Keratitis.

Interstitial keratitis is unfortunately common. It is in one way a blessing in disguise to the patient. It should enable the doctor to recognize the inherited taint and in treating that to treat the keratitis also. I know that textbook teaching, even the most recent, is very unsatisfactory (to use a mild term) with regard to interstitial keratitis. A rather favourite attitude is "anti-syphilitic treatment may be given, but it has little or no effect on the course of the disease." I have no sympathy with this attitude. As I have written elsewhere, even did I think anti-syphilitic treatment had no effect on the corneal condition, I would prosecute it energetically because by doing so I would be combating a serious inherited constitutional state, be safeguarding the child from other affections whose ætiology would be less readily recognized, be preventing possible or probable iritis and chorioiditis and the possible advent of incurable deafness at adolescence and I would be encouraging healthy growth and development. But a very considerable experience during many years as Honorary Ophthalmologist to the Brisbane Hospital for Sick Children has proved to me that anti-syphilitic treatment influences very markedly the corneal condition. The more thoroughly and promptly it is employed, the quicker and more certain is its effect. Only in rare cases am I satisfied with mercury by the mouth. I prefer mercury by inunction to any treatment and if possible with the patient confined to bed for the first few weeks. It must, of course, be no haphazard use of inunction. A definite quantity must be rubbed into a different area of skin each day and when the areas have become exhausted after six days, a hot bath has to be taken on the seventh day and the rubbing then started again at the first area on the eighth day. We should use 0.6, 0.9, 1.2 or 1.8 grammes (ten, fifteen, twenty or thirty grains) of *unguentum hydrargyrum* daily, according to the age and perhaps the weight of the child and at least half an hour must be taken to do the rubbing and to do it thoroughly. Ptyalism is to be avoided. At most the gums may be slightly touched. A majority of patients recover $^6/_6$ of vision. A few retain slight central opacities which, without disfiguring, diminish vision. I have gathered the impression that those possessing Hutchinson's teeth respond more quickly to treatment than those who do not. Those possessed of Hutchinson's teeth are in the minority. Patients with interstitial keratitis practically always give a reaction to the Wassermann test. In fact in private practice a Wassermann test is an unnecessary expense to such a patient. It is well also to bear in mind that when we are sure a patient is syphilitic, we had better not risk a Wassermann examination, in case the result should be "negative" and we draw a most unuseful "red herring" across the track. Invariably the child grows and developes well when under mercurial treatment, especially when under inunction and the teeth do not suffer.

My practice has been when a child is brought with early interstitial keratitis in one eye to tell the parents that vision which may then be $^6/_{12}$ or $^6/_9$, will become much worse before it begins to improve and that they must not be discouraged nor even surprised if the second eye becomes affected even after the first eye has begun to improve under treatment. We should, I know, bear in mind that we are doctors and not prophets, but some such prophecy as the above is given in these cases in the patient's interest, as otherwise the parents would not unnaturally be apt to lose confidence and discontinue treatment. Latterly I have considered that the prophecy regarding the second eye is to be given with reserve. I have come to believe that if the case is got early enough and energetically treated, an attack may be avoided in the other eye. I always hold out the hope of good vision in both eyes if the case has been secured at an early stage.

It appears to me most important for those engaged in general practice to adopt this attitude, because they will then encourage their patients to persevere with treatment for years, in the hope of securing not only good vision, but good health and development and healthy organs of special sense. A bad prognosis should not be given. I have had experience of a patient with a very severe but acute case of interstitial keratitis, possessing little more than

[1] Read at a meeting of the Ipswich members of the Queensland Branch of the British Medical Association on April 16, 1925.

perception of light with either eye, coming to me from her doctor in a distant town, with a hopeless prognosis. It was a prognosis I could not support. I anticipated very useful, perhaps good vision. I was also able to suggest that other children in the same family suffering from other severe ailments attributable to inherited syphilis, should be treated also.

Family history more often than not does not help in the diagnosis. The affected child may come anywhere in a large family, of apparently healthy parents and none of the others may exhibit manifestations of the disease. In such cases a kindly faith in the early chastity of even a dearest friend must go to the wall.

I should like to illustrate with a short note on two children and two adults. The two children were girls. Family history did not help. The Wassermann reaction confirmed the diagnosis.

One was eleven years old when I saw her first. She was suffering also from nasal septum trouble for which another doctor was treating her. I only insisted that whatever he did, my treatment must be carried out. She was suffering from an early interstitial keratitis of one week's standing. No Hutchinson's teeth. The vision of the right eye was $^6/_5$ and of the left eye $^6/_{12}$, that is the affected eye still saw $^6/_{12}$. She was put on inunction at once, but not confined to bed. A month later the eye failed to count fingers. Three weeks later still fingers were counted at 1.2 metres (four feet). In five months the eye was seeing $^6/_{36}$. Now nearly four years afterwards it sees $^6/_5$. She has had inunction all these years. The other eye has never been affected. She still gives a positive Wassermann reaction. She has developed into a fine, strong, healthy girl and weighs 52.5 kilograms (eight stone four pounds) at fifteen years of age, having put on nineteen kilograms (three stone) in four years. Her teeth are excellent. The dose of ointment has been increased from 1.8 to 2.4 grammes (thirty to forty grains) on account of the still positive Wassermann reaction. The attack in her case began very typically with injection and inflammatory thickening at the corneal limbus and pericorneal injection in the neighbourhood. Following or together with this there was slight interstitial opacity in the peripheral cornea near the inflamed and thickened limbus. From this as a commencement the interstitial opacity spread to implicate the whole cornea.

In other cases the interstitial opacity may be more towards the centre of the cornea or as a general slight corneal opacity almost from the start, the opacity increasing until a time after treatment has commenced. The opacity may also be atypical.

The other girl was aged seven years. She had Hutchinson's teeth and nystagmus. Her blood also gave a positive Wassermann reaction. The keratitis was not nearly as acute, although the eyes were not otherwise as good. She was only put on *hydrargyrum cum creta* by the mouth. After five years of this her corneæ were quite clear and her blood did not react to the Wassermann test. The drug was continued for another year, stopped for a year and recommenced last year; when as a girl of barely fifteen years she weighed over fifty kilograms (seven stone thirteen pounds), looked well and rosy and had excellent (though Hutchinson's) teeth and good vision.

The two adults I include to illustrate the not generally recognized fact that interstitial keratitis due to inherited syphilis may occur in adult life. Both these patients were twenty-eight years of age, both were returned soldiers. Each had a severe attack of interstitial keratitis in one eye, commencing after return from the front. Each had been gassed while away. Each had facial stigmata of inherited syphilis. Each was unable to count fingers at his worst and each recovered useful vision, put on much weight and increased in health under mercurial inunction. In neither case did the other eye become affected, although there had been more than sufficient time for this to occur. I considered in each case that the strain of active service had contributed to the attack and really determined it, although, of course, neither would have occurred had there not been the predisposing inherited state. The attacks were really beneficial because they led to treatment which might not otherwise have been found necessary.

In my experience when inherited interstitial keratitis occurs in an adult, some determining cause in addition to the constitutional state has existed, more often some trauma.

I have used arseno-benzol preparations in the case of some of these children. It has appeared to help in some, but not so in others. It is, I believe, prolonged treatment that is important.

It may be well to mention that after starting such patients, either children or adults, on treatment and finding that it does not disagree, their visits need not be frequent, once in six months or in a year perhaps. But they require supervision at these or shorter intervals.

Instead of ptyalism being a sign that mercury has been thoroughly given, it is a sign that it has been wrongly given. I was taught by Kaposi in Vienna years ago that ptyalism and diarrhœa were to be avoided and my own experience supports this teaching. I am careful never to induce ptyalism and if diarrhœa occurs, the drug is stopped until it ceases.

Squint and Refraction.

Time will admit of only a few words on squint and refraction.

Squint appearing, that is commencing in adult life, means unless there be some obvious other reason, an intracranial lesion or syphilis. It is as a rule a paralytic squint. The obvious other reasons may include, of course, a specific infection such as diphtheria or influenza. Squint in a child may be paralytic or due to an error of refraction. It may also be due to defective development of the fusion centre. In that case it may occur more or less distinctly in several members of a family. A paralytic squint occurring in a child otherwise apparently in good health, except perhaps for a little colic and constipation, and especially if due to paresis or paralysis of one or both external recti and again especially if the child be under eight years of age, should make us in Queensland remember that lead ingested from the powdery paint on verandah railings and garden fences may be the cause. If it be due to lead, papillœdema will be found upon using an ophthalmoscope and lumbar puncture should be done without delay. It will reveal and reduce increased intracranial tension. The reduction of this is imperative if we are to safeguard vision. But I have written so often on this subject that I need say no more. It is, however, to be remembered that the child never has a raised temperature if the condition be due to lead and that no other signs of lead poisoning may be exhibited to help the diagnosis. It will be necessary to find not only that lead is available, but that it has been carried to the mouth by biting the nails

or sucking the fingers, very occasionally by sucking the painted railings.

It is true that a law has been passed to prohibit the use of lead paint for verandah railings and garden fences, but I have good reason to believe that master painters are disregarding it.

Refraction squint is chiefly due to hypermetropia. It does not commence until the child begins to use its eyes to see things particularly. It results from an unconscious recognition by the child that monocular vision is easier than binocular, that it is both easier and more comfortable to use one eye at a time than both and in some cases that it is more satisfactory to use one eye to the entire exclusion of the other. In the last case the messages from the retina of the unused eye are inhibited from early childhood and are not recognized by the visual cortex. The eye becomes amblyopic from disuse. Unless early steps are taken to force the eye into use, the child is likely to be a one-eyed child for the the rest of its life. One, however, always cherishes the belief that should the used eye be lost, the necessity for using the amblyopic eye aided or not by correcting glasses will bring it to the rescue. I have, indeed, observed this. The study of hypermetropia, perhaps more than the study of any other condition, emphasizes the importance of treating every case on its merits and of recognizing that conditions which cause trouble or deformity in one child or adult, have no such effect on another. You may get three children of about the same age, with about the same amount and variety of error, one of them will have a marked alternate convergent strabismus and will see equally well with each eye, though, of course, using only one eye at a time. Another will have similar strabismus except that the fixing of one eye may be less perfect than that of the other to alternate examination. It will be found that that eye may see no letters of Snellen at six metres (twenty feet); whereas the other with the same or very slightly different refraction sees $^6/_5$. The first child has been accustomed to use its eyes more or less alternately and to disregard the messages from the retina of the eye not at that moment being used, not unlike what we all did on learning to use a microscope. The second child has unconsciously instructed its visual cortex to take no notice of messages from one eye and it has consequently never been used for particular vision. It sees light and sees objects indefinitely and perfect images are no doubt formed on its retina, but the portions of visual cortex associated with that eye refuse to recognize those images.

A third child with the same error as these two children will see equally well with its two eyes, will use them together and will not squint. It may or may not have either headaches or discomfort. Its visual mechanism has adjusted itself to the abnormal conditions. Occasionally such a child with three or four diopters of hypermetropia will grow up, do a lot of study, even enter the profession of medicine and work and read hard in it and outside it and arrive at the age of thirty-six years without experiencing any eye trouble and without having headaches. An illness, however, may at any time disturb this unnatural muscular balance and result in want of coordination and consequent squint and this squint may persist after health is regained unless correction be given. Also anything which puts one eye out of use even for a few days, such as an injury requiring a bandage, is apt to result in the patient recognizing that it is easier to use one eye alone and in consequence to squint after the bandage has been removed.

In contrast to those with a considerable error of refraction and no apparent discomfort or trouble we may have a child with a comparatively small error, one diopter perhaps, and he will have trouble even at school until it is corrected. Also a comparatively small amount of anisometropia will in some cause much trouble and headache.

Apparently some organisms are more adaptable than others; have more supplementary power of accommodating to correct disabilities than others. Some of our Scotch friends would call this "unconscious determination."

As a rule errors of refraction unless anisometropic do not cause squint unless they are considerable. On the other hand, it is the smaller errors, as I have already indicated, that are more apt to induce headache and other disturbances than larger ones.

A simple explanation may, I think, be found for this, namely an effort is made to correct by accommodation the smaller errors during the whole day, whereas no effort is made to adjust for the larger errors except for the moment when good vision is required. It is quite astonishing how free from headaches and discomfort some people with large errors even of astigmatism have been up to the time of correction. All the same they recognize the benefit of correction altogether apart from the improved vision obtained by it. The ophthalmologist may, however, not escape blame. They will perhaps complain and with truth that after wearing the spectacles he orders they are no longer able to see as clearly without them as before. The following example, one taken from many, will illustrate these remarks. Miss H., aged twenty-two, requires a + 4.5 diopter cylinder for each eye with a slightly different axis for each. She had worn only for the past four years and only for near work a somewhat similar correction. She has never suffered from headaches. As a contrast one's reputation in a neighbourhood may be made by getting rid of quite incapacitating headaches with the simple correction of + 1.25 diopters spherical for each eye for constant wear. And in one case I remember the outlook on life was entirely changed by the correction of + 1.5 diopters spherical for one eye and a plane glass for the other. In such cases correction has to be worn constantly.

An example of a hypermetropic squint which became corrected with little trouble, is given by a child of five and a half years. She had squinted since fifteen months old, generally with the left eye, which she shut as a rule when looking at anything. She was given for each eye + 4 diopters spherical for constant wear. A good effect was immediate. When seen six months later there was no squint and she saw stereoscopic pictures cor-

rectly. Two years later vision with her correction was noted to be normal with both eyes and with each and there was no strabismus. She had worn them always. They are not all as simple, but many are and we should aim at this result. The parents of a child suffering from hypermetropic squint which has been corrected by spectacles, have to be told distinctly that the need for correcting glasses caused the squint and that correction will require always to be worn. There are few exceptions to this.

When a squint is congenital and due to apparent complete paralysis of an external rectus, I have found more than once that if the external rectus be given a chance, it will take it and do the necessary work, at any rate to a cosmetic extent. I have divided the internal rectus and advanced the apparently paralysed external rectus with a very successful result in one case, where an English ophthalmologist for whose opinion I have the very greatest respect, had thought the external rectus was represented by an absolutely paralysed muscle. In such cases no harm is done by operation and there is a possibility of securing a result, although a very guarded prognosis has, of course, to be given.

Some children who have no real squint, appear to have a convergent one not only to their relations but even to their doctor. It is due to a condition of epicanthus. The skin of the upper lid is continued on each side downwards over the internal canthus and to hide the caruncle. Much less sclerotic than usual, therefore, is exposed to view between the cornea and the inner canthus. If, therefore, the eyes are turned even a little to one side, the eye turned towards the nose shows so little sclerotic that the impression of internal strabismus is given. Such children have generally low, undeveloped bridges to their noses. When the bridge rises the deformity is entirely or largely corrected. It can be corrected for demonstration purposes when we see them, by pinching the skin over the bridge of the nose so as to expose the caruncle on each side. The apparent squint will be then noticed to have disappeared.

Cataract.

My next subject is cataract. It will be necessary first to indicate one or two points in the diagnosis of cataract. The initial diagnosis of such cases is generally made by the family doctor. A patient comes to his medical man complaining of recent failing vision for both near and far objects. If an elderly person and the failure cannot be attributed to refraction or to tobacco, the hope should be that cataract is the cause. Every medcial man should carry a lens for oblique illumination in his waistcoat pocket. Say that oblique illumination suggests an opacity in the lens. Never be satisfied to diagnose anything but a very advanced cataract by oblique illumination only or you will make mistakes. Always verify by an ophthalmoscopic mirror and with a + 8 or + 10 diopter lens behind the mirror. The mirror should be held not close to the eye, as should be done for an examination of the fundus, but at several inches from it. With a small pupil it may even then be impossible to be sure whether the periphery of the lens is or is not transparent, but definite central opacity will be recognized. A mydriatic should not be employed without hesitation in such cases, because of the danger of inducing glaucomatous tension. Medical men should make a practice of acquainting themselves with the tension of normal eyes in order that they may recognize possibly glaucomatous tension. They will find that normal eyes vary in tension within wide limits. Those who have made themselves acquainted with the varying degrees of normal tension, will have no difficulty in recognizing the abnormally high tension of an acute glaucoma. The same cannot unfortunately be said of chronic glaucoma. An eye with a high normal tension, a somewhat dilated pupil and perhaps a somewhat shallow anterior chamber and hinting at lens opacity to oblique illumination though not to the ophthalmoscope, should suggest the possibility of chronic glaucoma especially if any history of variation in acuity of vision is forthcoming.

Another pitfall to be avoided in the provisional dagnosis of cataract is the possibility of mistaking a pupil occluded by exudation for cataract. An ophthalmoscopic mirror again used as I have just now suggested will be a great help in making a provisional diagnosis. Some cases of iritis, especially those which are manifestations of tertiary syphilis, occur without pain or injection and inflammatory deposit in the pupil is very insidious. Treatment in such cases is urgent and here a mydriatic should be promptly employed.

It is well to remember that in acute glaucoma the pupil is always enlarged. It is not so in cataract. It is not so in iritis. The need for immediate diagnosis in cataract is not great. The need for prompt diagnosis in acute glaucoma or in iritis is very great.

It was the opportunity of showing two Ipswich patients tonight which induced me to include cataract as one of my subjects. These two patients were kindly referred to me by Dr. Cooney. I propose to speak of three varieties of cataract, namely congenital lamellar cataract, traumatic cataract and senile cataract.

The lamellar variety of cataract exists as a rule at birth and does not increase. I am, however, this evening able to show you a case which is definitely increasing in a patient at the age of thirty-three years.

Congenital Lamellar Cataract.

Lamellar cataract consists essentially of one or more lamellæ of the lens being developed in an opaque instead of in a transparent state. The opaque lamella may be near the periphery of the lens. It may be around the nucleus of the lens and it may be in or around the nucleolus of the lens. In one case which gave me much trouble to lead to a successful issue, the small boy had all three varieties of this in each eye. There was a fine opaque peripheral lamella, within that there was a more dense lamella around the nucleus of the lens and there was a dense white nucleolus in the centre. Each lens indeed through a dilated pupil resembled a large nerve cell without processes.

In dealing with a lamellar cataract the treatment depends upon where the lamella of opacity is and what the vision is. If the opacity is within the nucleus or around a small nucleus and the periphery of the lens exposed by dilating the pupil is quite clear and it seems likely, therefore, that an optical iridectomy with a resulting pupil in front of a portion of this transparent periphery will give useful vision, then an optical iridectomy should be the operation chosen. The boy I am able to show you tonight suffered from a condition typically suited to such treatment and as the two eyes were identically affected and I have only operated on one eye, you will be able to distinguish what that eye was before and compare it with its present state. In the unoperated eye the clear part of the lens is covered by the iris and the nucleus rendered opaque by the dense lamella of opacity surrounding it occupies the whole pupil. Prior to the operation when both eyes were in this state, he could see in ordinary daylight practically nothing but light from darkness, unless he shaded his eyes by his arm in order to enlarge the pupil somewhat. Of course, he then saw best on a dull day or with his back to the light in a not very bright room.

In a case such as this a successful optical iridectomy gives a much more useful eye than one deprived of its lens, because if emmetropic it requires no spectacles during childhood or young manhood. Whereas if deprived of its lens it would require one glass for distant and another for near vision. A vision of $^{6}/_{18}$ or even of $^{6}/_{24}$ would be more convenient especially during school life than double that vision obtained only by the use of a strong lens for distance and a still stronger for near work.

Should the lamella of opacity be nearer the periphery than the lamella surrounding the nucleus, sufficient clear periphery would not exist to admit of an optical iridectomy giving useful vision. In that case the lens has to be broken up and caused to dissolve in the eye. This has to be done gently at first and more thoroughly when we have proved that the eye will not react badly to swollen lens matter.

In young children the lens dissolves very readily as a rule and occasionally one needling is sufficient. But this operation is not always simple or free from complications.

After childhood discission of a cataract is to be decided upon with hesitation. The older the person, the less likely is the lens to dissolve. After forty I would hesitate to try. Still I was once bold enough to do so in one eye of a man of forty years. He had suffered from congenital lamellar cataract in both eyes and from a high degree of myopia; he had always seen imperfectly, but sufficiently to do his work as a school master until the opacity began to increase and to interfere with his work. The eye gave me some trouble and anxiety, but he obtained excellent vision with a very little plus correction and was delighted to see much better than he had ever done before.

The mother of the boy I showed you tonight is the subject also of congenital cataract. You will notice that to the original opaque lamella around the nucleus of each lens has been added a peripheral opacity also and even since I saw her first in 1923 vision has markedly decreased from $^{6}/_{18}$ in the right eye to $^{6}/_{24}$ and from $^{6}/_{36}$ in the left eye to $^{6}/_{60}$. I am afraid that something will have to be done sooner or later to the worse eye. An optical iridectomy in her would be of little advantage. She is thirty-three years of age and a bit old for a discission. If we are to choose that course the sooner we operate the better, because she will not grow younger.

Traumatic Cataract.

What I have said about congenital cataract leads up to traumatic cataract.

If a traumatic cataract results in a child or young person and the lens capsule has been ruptured and has so allowed the lens matter to begin to dehisce into the anterior chamber, we may have to do nothing but dilate the pupil with atropine and keep it dilated until the lens matter has all been dissolved by the aqueous fluid. This may take several months. If it does not completely dissolve, it will become necessary to help the remaining lens matter into the anterior chamber or help the aqueous to get at it by means of a discission needle.

I have described the simplest form of traumatic cataract. Seldom, however, does such a form occur without a penetrating wound of the cornea and of the anterior lens capsule also. If the penetrating material has been aseptic and the wound has remained aseptic and is not too large or too central, it will be merely a matter of keeping it aseptic and expecting the injured lens to behave as I have described.

In an older person a traumatic cataract is a much more serious matter. If the anterior capsule of the lens has not suffered rupture, it may be right to wait until the cataract has become complete and to then remove it as a whole. If there has been a penetrating wound of the cornea and of the anterior lens capsule, even if no septic matter has entered the eye, it has been very seriously injured. The dehiscing lens matter will not dissolve readily, the lens will imbibe aqueous and swell and cause glaucomatous tension. Some of it will require to be evacuated and this is not unlikely to be attended with loss of vitreous because the suspensory ligament of the lens is almost sure to have been injured by the blow. A traumatic cataract, therefore, in a child or young person, though serious, is when compared with one in an older person a trivial injury and is to be expected to result merely in an aphakic or lensless eye. An aphakic or lensless eye, it has to be remembered, will never again work as a pair with an eye containing its lens, so that the patient will be to all intents and purposes a one-eyed man for the rest of his life. But it has also to be borne in mind that the aphakic eye is a potential eye ready to be made a useful eye for all purposes,

with the aid of correcting glasses, should anything happen to destroy the sight of the other eye.

A traumatic cataract without rupture of the capsule of the lens would in a child be dealt with like a congenital cataract and in an adult above forty like a senile cataract.

When a trauma includes a larger penetrating wound of the cornea and sclera and includes the ciliary region, it is either difficult or impossible to save the eye.

Senile Cataract.

I need not say much about senile cataract. It may develope at as early an age as forty years and even be a habit at that age in a family. There is considerable difference of opinion regarding the best method of dealing with senile cataract. I have learnt to believe in certain rules of conduct and to put them in practice. If a cataract in one eye developes first and keeps well ahead of that in the other, it may be and should be allowed to ripen while vision is carried on by the other eye. No useful object to the patient is gained by operation even when it gets ripe, except to have it ready for use when the other begins to fail.

When a patient has lost one eye and has a ripening cataract in the other, one is not too keen to operate on the only eye until the cataract is ripe, because that is the most favourable time for securing good vision. Still circumstances may force our hands to operate on an immature cataract. We have then to choose between the ordinary operation always then combined with an iridectomy and followed by very careful after treatment or we may choose removal of the lens in its capsule by means of expression as taught by Smith or by means of suction as taught by Barraquer. Each of these last is attended by more risk to the eye than the ordinary or capsulotomy operation, because of the danger of considerable loss of vitreous. But either of these when completely successful gives very excellent vision. The advantage as regards vision is not, I think, worth considering, because it is possible to secure $^{6}/_{5}$ of vision with an ordinary capsulotomy operation combined with an iridectomy and we surely do not wish for more than that.

Upon the results of an operation for senile cataract the future happiness and comfort of a patient depends and our first object must be to give him useful vision in the safest way possible. It may be right to take some extra risk when the patient has two eyes.

I would like to say here that I have no faith in any so-called treatment having for its object the cure of cataract without operation. The fact that cataracts often develope to the extent of diminishing vision somewhat and then remain stationary for years, is the circumstance by which as a rule such so-called cures may be explained. In some others faith healing may be explained in the same way. I observed two such cases both before and after being "cured" of cataract by Mr. Hickson. In each case the opacity had in no way altered either in extent or character and in each case the vision was identical with what it had been before. But in each case the patient came in the belief and with the statement that Mr. Hickson had cured her cataract. I created disappointment by disabusing them of this belief, but it was necessary and right to do so and I was believed.

Reports of Cases.

A CASE OF EXSTROPHY OF THE BLADDER.[1]

By D. A. Cameron, M.B., Ch.M. (Sydney),
Honorary Consulting Surgeon, Hospital for Sick Children, Brisbane; Honorary Surgeon, Lady Lamington Hospital, Brisbane.

F.W.L., aged two years and ten months, was referred to me on January 31, 1923, by Dr. H. Dolman. The boy was suffering from complete *ectopia vesicæ*. The anterior vesical wall and part of the parietes were absent. The anterior surface of the posterior vesical wall pouted forward and the urine escaped as it left the ureters. The pubic bones were ununited, there being no pubis. The penis was in a condition of complete epispadias. There was no umbilicus. Large right and left inguinal herniæ were present. The child had previously suffered from some prolapse of the rectum, but not during the preceding year. I sent the child into one of my beds in the Hospital for Sick Children on March 7, 1923. Urine from the ureters proved to be sterile and X-ray examination revealed absence of pubic bones. Some of those present tonight will remember seeing the boy at a clinical meeting on March 22, 1923. On March 23, 1923, I made a mid-line incision in the lower part of the abdomen and dissected out the right ureter from behind the peritoneum. I cut it across close to the bladder wall and transplanted it into the right side of the lower part of the sigmoid or the upper part of the rectum. The last 1.8 centimetres (three quarters of an inch) of the ureter were buried between the mucous membrane and the muscle of the intestinal wall after Coffey's method. The patient stood the operation well. A large catheter was placed in the rectum for a few days.

On March 29, 1923, an incision was made through the previous site and the left ureter was transplanted in a similar manner into the left side of the lower part of the sigmoid at a higher level from the anus. The reaction after both operations was very slight and by April 6, 1923, the urine was sometimes retained for as long as two and a half hours.

On May 24, 1923, I dissected away the mucous membrane of the bladder and stumps of the ureters with the exception of the site of the *utriculus prostaticus*. My object in leaving the latter is to fashion a canal on the penis at a later date.

On July 12, 1923, the boy was discharged from hospital.

On July 24, 1923, the right inguinal hernia became strangulated and was reduced by taxis by Dr. H. Dolman.

On August 12, 1923, the patient was readmitted to hospital.

On August 16, 1923, I operated on the right inguinal hernia.

On September 4, 1923, I operated on the left inguinal hernia.

On October 26, 1923, the patient was discharged from hospital and I have not seen him again until this week. I wrote to the mother and she has kindly brought him here tonight. She informs me that the child is now happy, plays with other children, holds his urine from two to three hours according to the weather and the amount which he drinks. He apparently has an occasional feverish attack which the mother states is not severe, and he does not go to bed, otherwise the child's health is excellent. You will observe that the

[1] Read at a meeting of the Queensland Branch of the British Medical Association on April 3, 1925.

testicles are well developed for his age and can now be pulled down into the scrotum. There is no doubt that this operation as described by Mayo with Coffey's method of transplantation of the ureters is a great advance on any of the previous operations. Patients can carry on their lives in comfort and I have not yet seen one to do so with any of the other operations.

LIPOMA OF THE CERVICAL REGION.

By J. Cappie Shand, Junior, M.B., B.Sc., Ch.M. (Sydney), *Sydney.*

The patient H., aged seventy-four years, visited my rooms. He was a frail, feeble, bent, old man assisted by an attendant and had a large tumour over his back, the weight of which overbalanced him when he sat down. He complained that the tumour was troublesome and causing irritation of the skin in the folds under its lower margin. The tumour had the size and appearance of a football situated over the left shoulder.

The patient had first noticed a small lump near the left occipital region, just below the ear, twenty-four years ago. From this it grew in size until it reached its present dimensions. During this period the patient visited six different doctors, who on account of his frailty all advised against its removal as too great a risk. In 1920 the size was getting threatening and a surgeon attempted its removal, but the patient collapsed as the anæsthetic was administered and the attempted removal was abandoned. However, the tumour had reached a size and condition threatening sloughing and necrosis, which brings to mind Sir James Paget's description of such tumours.[1]

> Fatty tumours though rarely beginning, commonly continue to grow in old age and often with the progress of senile decay the integument covering the most prominent and dependent part of the fatty tumour sloughs and ulcerates and may thus become dangerous to life.
>
> The chance of such an event may be counted amongst the reasons for removing such tumours in due time. For this chance is at least as great as that of the calcification of the tumour in which its increase might be staved. Many an old age is rendered unhappy by the weight and other troubles of a fatty tumour, which might have been removed many years before.

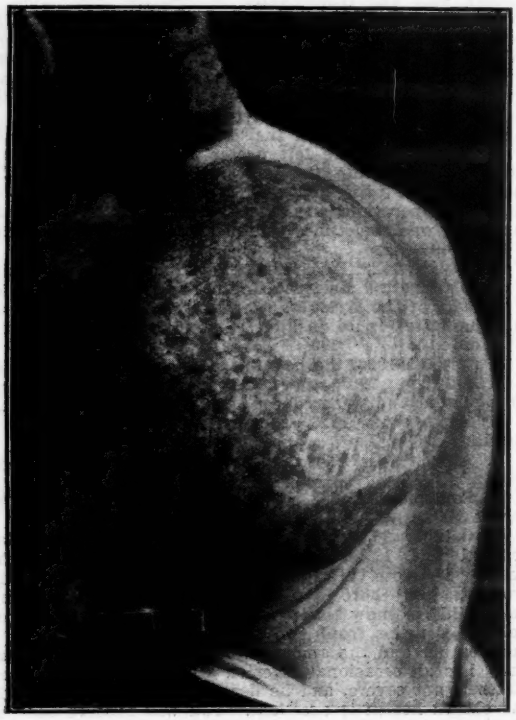

Figure I.
Showing Patient Before Operation.

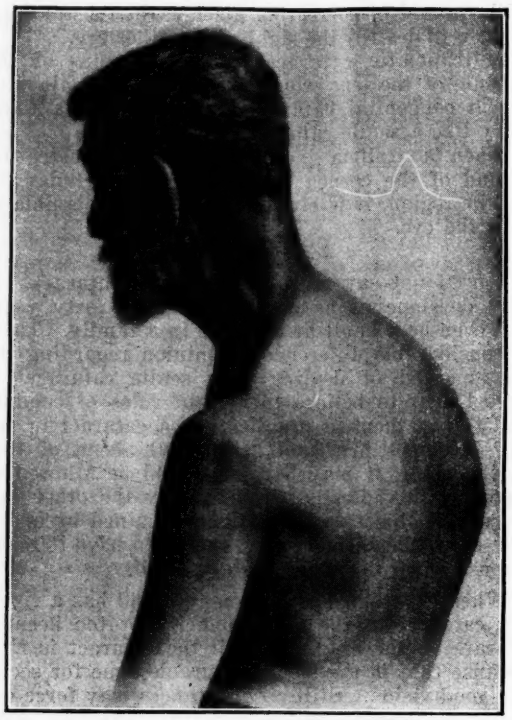

Figure III.
Showing Patient After Operation.

The patient was admitted to the Mater Misericordiæ Private Hospital on July 22, 1924. The urine contained a deposit of blood and after three days rest the hæmaturia disappeared.

The operation was performed on July 26. The anæsthetic was given by Dr. Lidwill with his intratracheal method of administering ether.

The patient was lying on his right front with the tumour uppermost and he was supported in that position by sand bags. The gum elastic cannula was passed into his trachea before he was turned over.

Operation.

The incision was made in the direction of the posterior primary divisions of the thoracic nerves over the middle of the tumour. Two fascia-like layers were traversed to reach the pseudo-capsule of the tumour which was surrounded by dense areolar tissue, and these were separated from below upwards and the vessels entering found at the root of the neck. These were ligated and divided and the tumour removed. The facial layers and the skin then being too lax, portion was excised, but they were left on the redundant side to prevent defective circulation. These were united in layers and as there was a slight tendency to ooze, a drainage tube was put into each end of the wound and the usual dressings applied.

The patient was placed in a warm bed. His pulse was then eighty and a good volume.

On July 27 the wound was dressed. There was a slight oozing from the tubes and later in the day the patient felt so well that he pulled himself up into a sitting posture and lay back on his pillows causing a movement of the tubes which set up a subcutaneous hæmorrhage. The tubes were removed and pressure applied. The bleeding soon ceased, but the hæmatoma remained. Owing to the feeble condition of the patient, I left this for removal at a later date.

On July 28 he was progressing well and was sitting up. By July 30 the hæmatoma had become a solid clot; the patient was comfortable.

On August 6 the stitches were removed. The wound was cleanly healed along the whole incision. On August 10 the hæmatoma was showing signs of liquefaction. On August 12 the wound was opened over the centre of the softening with a probe. From August 13 to August 18 the hæmatoma was slowly draining and no other discomforts were noted. The patient walked unattended.

On August 25 the patient went home. The hæmatoma had been absorbed and the redundant tissues were being absorbed. His weight was forty-five kilograms (seven stone one pound). On October 7 the redundant tissues were still being absorbed. His weight was fifty kilograms (seven stone thirteen pounds). By December 9 the cicatrix had almost gone. His weight was fifty-seven kilograms (nine stone).

The patient is now quite well.

Pathological Report.

The tumour proved to be a lipoma, weighing 8.6 kilograms (nineteen pounds).

Reference.

(1) Heath: "Dictionary of Practical Surgery," 1887.

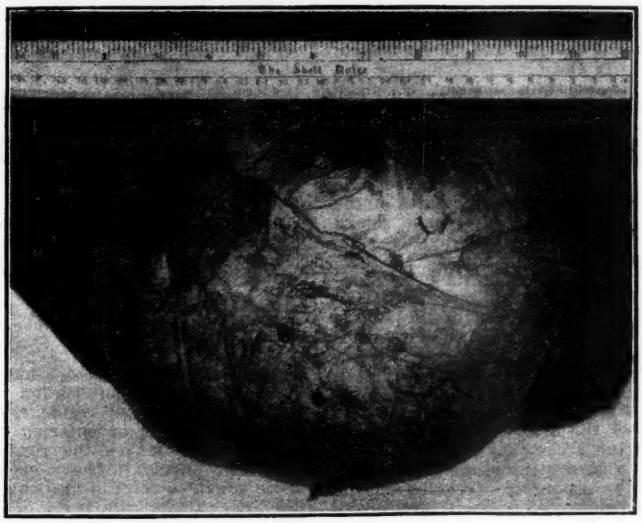

FIGURE II.
Showing Tumour After Removal.

Reviews.

THE CIRCULATORY DISTURBANCES OF THE EXTREMITIES.

THERE is still considerable difference of opinion as to the nature of the pathological processes that underly even the commonest diseases of the circulatory system. Hence Leo Buerger's volume on "The Circulatory Disturbances of the Extremities" is a welcome addition to the literature on the subject.[1]

The study of diseased vessels in the limbs apart from the body as a whole, has certain obvious disadvantages. This somewhat artificial demarcation is presumably due to the fact that much of the author's original study has been on amputated limbs where complete investigation of the circulatory system as a whole was impossible.

The division of a book of six hundred and one pages into one hundred and eight chapters makes it jerky and deprives it of the smoothness essential to pleasant reading. Some of the chapters are little more than paragraphs. Unquestionably the author is master of his subject and has the literature at his finger ends. There is a wealth of references and these enhance the value of the volume as a book of reference, but to the more casual reader the author's views do not stand out sufficiently clearly against the background of quoted opinions. In places the writing is diffuse and there is much unnecessary repetition. There are approximately two hundred very good illustrations, of which about eighty and these the best, are borrowed. Certain expressions employed by the author, such as "varied motivation," "functionating links," offend the ear and the term "exitus" for death, as in "exitus occurred after operation," "sudden exitus" and so forth, is particularly unpleasant. The somewhat disproportionate amount of space (one hundred and seventy-two pages) devoted to "thrombo-angiitus obliterans" is due to the fact that the author has made this disease his special study. No differentiation is made between atheroma and arteriosclerosis, indeed the term atheroma is not used. To athero- or arterio-sclerosis the author allots sixty pages, to syphilitic diseases of vessels, thirteen.

The author contributes an interesting chapter on intermittent claudication. He points out that although believed by some to denote a morbid entity, it should be more properly confined and restricted as a designation for a complex of symptoms which may be associated with a number of different pathological processes, such as arteriosclerosis, syphilitic endarteritis and "thrombo-angiitis obliterans," or even with vasomotor affections such as Raynaud's disease. Doubtless many of the cases of socalled vasomotor or angiospastic forms of intermittent claudication belong to the vasomotor neuroses, intermittent claudication being only one of the manifestations, just as are cyanosis, ischæmia and other phenomena. Oppenheim believes that the angiospastic neurosis with symptoms of intermittent claudication may be a prodromal stage of what he calls organic intermittent claudication. In defence of this proposition Oppenheim cites the case of a young man in whom vasomotor manifestations preceded by years the final appearance of intermittent claudication with evidences of arterial obstruction. The author says that to assume, as Oppenheim does, that there is an intimate "motivating dependency" between a prior neurotic state and a succeeding arterial disease, would appear an audacious hypothesis in view of the fact that in the most intense and exquisite form of vasomotor or angiospastic condition, Raynaud's disease, such an organic vascular eventuality is altogether lacking. The author admits, however, that definite vasomotor symptoms occasionally with, but usually without intermittent claudication, may occupy the clinical picture weeks, months or almost years before the typical objective manifestations of "thrombo-angiitis obliterans" are recognizable; but, in his opinion, to deduce a causal association between the excessive lability of the vasomotor functions and the consequent inflammatory and obstructive vascular lesions would be unwarranted. Oppenheim recognizes a "genuine" or true organic form of intermittent claudication and an angio-neurotic. But even for the former variety he would postulate the existence of a congenital mediocrity or inferiority of the vascular system, a degenerative stigma that runs parallel with the neuropathic diathesis of these individuals. The finding of abnormally small femoral

[1] "The Circulatory Disturbances of the Extremities Including Gangrene, Vasomotor and Trophic Diseases," by Leo. Buerger, M.A., M.D.; 1924. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Royal 8vo., pp. 640, with 188 figures. Price 45s. net.

arteries *in vivo* during their exposure for the performance of the Welting operation of arterio-venous anastomosis, convinced Oppenheim of the correctness of his hypothesis. Just how important are the predisposing factors to which Oppenheim alludes, to wit, the congenital *Anlage* or congenital mediocrity or inferiority of the vascular and nervous systems, the author finds it impossible to say.

Higier's conception of the interrelationship between arterial affection and intermittent claudication is discordant and at variance with the author's in that Higier believes that the vascular processes are secondary in some cases to a primary, nerve lesion.

The suggested explanations of the phenomena underlying intermittent claudication are unsatisfactory. Most authors invoke vascular spasm as the most plausible. Such vaso-constriction would be pathological, since our physiological concepts presuppose dilatation as a response to excessive demands.

The disease to which in 1908 the author first gave the name "thrombo-angiitis obliterans," he regards as a clinical and pathological entity which has been and is still incorrectly called *endarteritis obliterans* by many authors. The author states that he has established the following facts by his studies: That the disease is not an *endarteritis obliterans* and is independent of athero- or arterio-sclerosis; that it is an occlusive thrombotic process involving the deep arteries and the veins of the upper and lower extremities or the superficial veins; that the early stages of the disease manifest themselves in an inflammatory lesion which shows a specific and characteristic morphological picture while in the process of healing and that in the early or acute stage certain purulent foci make their appearance that would suggest a microbial agent or infectious causative factor. No organism, however, has yet been demonstrated, even in the superficial veins when these are in the stage of acute inflammation. Syphilis, the author says, has been regarded by some as a possible cause, but a study of the histories and the results of the Wassermann test in more than thirty cases have shown that this is not responsible. There is, he continues, no phenomenon of more importance in elucidating the true nature of the pathology of "thrombo-angiitis obliterans" than the characteristic thrombo-phlebitis or "migrating phlebitis" of this disease. The association of thrombosis of the superficial veins of the upper and lower extremities with other evidences of obliteration of the larger arteries occurs in a sufficiently large number of patients to make the affection of the veins almost pathognomonic. Wherever vessels are occluded, there is apt to be an agglutinative process which binds together the artery and its collateral veins and sometimes also the accompanying nerve. The adhesive condition is due to fibrous tissue and varies considerably in its amount. The lesions in "thrombo-angiitis obliterans" are in chronological order, an acute inflammatory lesion with occlusive thrombosis and the presence of purulent foci in the clot, the formation of military giant cell foci which sometimes closely resemble those of tuberculosis, the organization and canalization of the clot, the disappearance of the inflammatory products and the development of fibrotic tissue in the adventitia that binds together the artery, vein and nerves. The author says he has observed what he terms the acute lesions of the disease in territories other than the vessels of the extremities, namely in the spermatic artery, in the veins of the spermatic cord and old lesions in one of the branches of the gastric artery in a case of ulcer of the stomach. Clinical and pathological data have led to the assumption that the progression of the thrombotic process takes place rather in attacks or sudden exacerbations than by a gradual ascent, in other words that the disease is relapsing rather than continuous. It is the interference with the circulatory conditions of the limbs brought about by the extensive occlusive process that is responsible for most of the clinical manifestations. Thus it may be correctly said that patients afflicted with "thrombo-angiitis obliterans" do not usually suffer directly from the disease itself, but from the disastrous occlusive thrombosis which signalizes Nature's method of healing a vascular lesion that has long since disappeared.

The book throws considerable light on an obscure subject, but much more study is essential before the problems concerned can be regarded as completely elucidated.

CLINICAL METHODS.

Dr. George R. Herrmann has published a book entitled "Methods in Medicine: A Manual of the Medical Service of George Dock."[1] This is a most valuable publication. It indicates the height of real efficiency with which clinical work is sometimes carried out in a modern American hospital.

In a preface the author explains that the book gives an account of a system which has proved efficient in those wards of the Robert Abbott Barnes Hospital, St. Louis, containing the patients of Professor George Dock whilst physician-in-chief.

The manual is divided into five parts.

In Part I. duties of the resident staff of the physician-in-chief are explained. A resident medical officer is responsible for all patients, for the investigation of their condition and for their treatment. As the routine work involves all known laboratory aids to diagnosis, the medical resident officer is provided with four assistants and five "internes," the latter are presumably undergraduates and they work under the direct instructions of the assistant medical officers. Complete records are made by this staff of all histories, clinical and laboratory investigations and conclusions. These are used not only for the hospital records, but also for the information of the patients' private medical attendant who receives two reports from the institution. One report is sent five days after the patient's admission and the other after the patient's discharge. In Part I. are also included chapters in which the routine methods of laboratory tests used in the study of various diseases are explained.

Part II. is devoted to the description of such special laboratory investigations as tests dealing with the gastric function, the renal function methods of bio-chemical investigations.

Part III. consists of an excellent discussion on dietetics. Simple diets for various disorders are outlined. The chapter on the treatment of *diabetes mellitus* is one of the best in the manual.

General therapeutic measures are discussed in Part IV. and Part V. illustrates the elaborate charts used in the recording of patients' histories.

The book is a most complete textbook on clinical methods and its publication should serve the purpose of showing hospital residents once and for all what is expected of them on entering a hospital service. Perusal of this book makes the reader feel envious of anyone fortunate enough to have such an excellent opportunity as is provided for the medical staff at the Robert Barnes Hospital.

CLINICAL EXAMINATIONS.

"A Clinical Guide to Bedside Examination," by Dr. H. Elias, Dr. N. Jagic and Dr. A. Luger, is a small manual of one hundred and twenty-four pages devoted to the tabulation of physical signs of disease and certain elementary clinical methods.[2] It is designed for the use of students and does not cover any new ground.

The greatest amount of space is devoted to the special physical examination of the lungs. The subject matter of the book is not well arranged. For example, in the examination of the lungs percussion and auscultation are considered before palpation. Many proper names are used throughout and this will not make study any easier for students who rely on this book for instruction in clinical methods.

[1] "Methods in Medicine: The Manual of the Medical Service of George Dock, M.D., Sc.D.," by George R. Herrmann, M.D., Ph.D.; 1924. St. Louis: The C. V. Mosby Company; Royal 8vo., pp. 521, with illustrations. Price: $6.50.

[2] "A Clinical Guide to Bedside Examination," by Dr. H. Elias, Dr. N. Jagic and Dr. A. Luger (Vienna); Arranged and Translated by Wm. A. Brams, M.D.; 1923. New York: Rebman Company; Sydney: Angus and Robertson, Limited; Crown 8vo., pp. 143. Price: 7s. 6d. net.

The Medical Journal of Australia

Cancer Research.

SATURDAY, MAY 16, 1925.

On Tuesday, April 28, 1925, the New South Wales Cancer Research Fund was officially inaugurated at the Town Hall, Sydney, in the presence of Their Excellencies the Governor-General and Lady Forster. The fund is in the charge of a professorial committee of the University of Sydney, of which Professor F. P. Sandes is the Honorary Secretary. Sir Neville Howse, V.C., Minister of Health of the Commonwealth, spoke in earnest commendation of the objects of the movement and referred to the action of his Government in giving it financial recognition. He and other speakers dealt with the increased frequency of cancer during the past few decades. In every civilized community the problem has become an urgent and vital one, for the deadly nature of the disease added to man's helplessness in stemming its ravages renders it a matter of personal concern to each and every individual. Sir Neville Howse laid great emphasis on the fact that despite much earnest and careful investigation the causation is still undiscovered. Dr. R. B. Wade, the President of the New South Wales Branch of the British Medical Association, impressed upon his audience that the Australian student is a highly competent investigator and that his environment is eminently suited to excellent research work. The late Sir William Macewen expressed this opinion on the occasion of his visit to Australia in 1923.

Within the past few months we have discussed this subject on several occasions. It must be recognized that the onus falls on the medical profession to convince the public of three facts in connexion with cancer. The first is that practically the whole community must lend its aid in a coordinated effort to gain a mastery over this gaunt enemy of mankind. Approximately one-fifth of the citizens of the Empire dies of cancer or tuberculosis. As Dr. T. Cherry has pointed out the reduction of the incidence and mortality of tuberculosis is being replaced by an equivalent increase in the incidence and mortality of cancer. In almost every family one or more members in each generation die of cancer. It is often a long ailment and prolonged illness necessarily entails a heavy expenditure of money. Both from a sentimental and from an economical point of view the ravages of cancer create a dead weight impeding progress and inhibiting individual and national prosperity. If every man and woman realized how much he or she was concerned in this calamity, it would be unnecessary to ask twice for financial aid to establish and maintain a national cancer research fund. The second fact to be brought to the notice of the laity is that the only way in which mastery can be gained over this disease, is to institute a well-planned and energetic attack from every possible point in connexion with its causation by a very large army of competent workers. The wider the assault, the greater will be the prospect of success. The third fact of importance which everyone should know, is that it is a useless expenditure of effort for an individual worker to seek a cure; the cause must first be discovered by laborious and ingenious study. In other words there must be coordinated research. These three facts can be amplified in many directions until the argument is overwhelmingly convincing that the public has the duty of providing ample funds to pay for this campaign. It has been pointed out over and over again that it is no one's business to remunerate the research worker. The sharpest wits and the greatest intellects are needed for this work. To secure the services of the best investigators it is necessary to have a large fund. The New South Wales Cancer Research Committee is asking for but a few thousand pounds. If a business man had a problem of the same magnitude before him, he would need a capital running into millions. The medical profession can help in a body by appealing to their patients to invest money in this manner. The rich cannot find a better channel for the sane employment of their accumulated riches. Crœsus realized that he could not take his wealth with him to the other side of the Styx. But a man does not need to be a millionaire to help in the campaign. In all

sound financial investments men of moderate means bear a substantial part of the burden and in the aggregate contribute largely toward success. Donations from both sources would yield a sum of sufficient magnitude to enable the committee in New South Wales and similar organizations in other States to conduct a great campaign with the best prospects of wresting from Nature her jealously held secret of the ætiology of cancer.

Current Comment.

THE HÆMOHISTIOBLAST OF FERRATA.

In a normal, adult organism hæmatopoiesis takes place mainly according to what has been called the homoplastic plan. In other words the several types of blood cell are formed by proliferation and differentiation of their own specific young forms. In abnormal conditions, such as certain blood diseases, and after great loss of blood the homoplastic process may become insufficient and blood formation is thrown backwards, immature forms of blood cells appear in the circulation and it is also held that they originate anew as in the embryo from primitive, indifferent cells, with a large, clear nucleus and a basophilic, homogeneous protoplasm. The cells are histologically identical with the larger types of lymphocytes in the lymphoid tissue.

In 1919, Ferrata and Franco described a type of cell in the peripheral blood and in the spleen of persons suffering from chronic myelogenous leuchæmia which they named the hæmohistioblast. Dr. Maurice N. Richter has recently made some observations on this blood cell.[1] He describes the cells as of large size, of irregular shape and as of being possessed of a single round or oval nucleus with a characteristic reticulated internal structure likened by Ferrata to a sponge. They have distinct nucleoli and basophilic cytoplasm in varying amount with or without granules. Irregular forms are sometimes produced by attenuated cytoplasmic prolongations of considerable length extending to other cells in the microscopical field. Mitotic figures have sometimes been observed. This cell is morphologically identical with the group of tissue cells variously known as clasmotocytes, resting wandering cells, adventitial cells, reticulo-endothelial system. It is held that these cells arise by differentiation of connective tissue cells and that the presence of typical neutrophile and eosinophile granules in their cytoplasm indicates that the connective tissues from which they have arisen, were undergoing myeloid transformation. A variety of fates has been ascribed to the hæmohistioblasts. Thus Ferrata and Negreiros-Rinaldi recorded their differentiation into monocytes and lymphocytes. Gasbarrini described them in lymphatic leuchæmia and Reitano in monocytic leuchæmia and their differentiation into lymphoid and monocytoid cells instead of into granular leucocytes. Ferrata held that the hæmohistioblast was capable of differentiation into a red blood cell. Vasiliu has been held to have confirmed this observation by finding hæmohistioblasts in the peripheral blood of an infant with pernicious anæmia and by observing stages of their differentiation into megaloblasts. Di Guglielmo as a result of his study of mammalian embryos concluded that the earliest circulating blood cells arise by differentiation from hæmohistioblasts.

Dr. Richter has studied hæmohistioblasts in four cases of chronic myelogenous leuchæmia and in one case each of lymphatic leuchæmia, quartan malaria, infantile anæmia of von Jaksch and *Staphylococcus aureus* septicæmia. It is not necessary to describe these cases in any detail; it is sufficient to state that as a result apparently of these few observations he has divided hæmohistioblasts into four main groups. He describes them as occurring in undifferentiated, lymphoid, monocytoid and myeloid forms. Dr. Richter states that the hæmohistioblasts represent a definite type and are not to be confused with any other cell in the peripheral blood. Their morphology especially in regard to nuclear structure is that of the connective tissue cells. That they are not degenerative forms is evident from their perfectly preserved structure and of their differentiation through progressive and not regressive stages. Dr. Richter holds that the presence of hæmohistioblasts in the peripheral blood and their differentiation into leucocytes and lymphocytes indicate that these cells were being formed directly from connective tissue without the usual intermediate hæmocytoblast stage. He states that inasmuch as hæmohistioblasts acquire the characters of specific blood cells, it must be assumed that they are potentially capable of this differentiation, although this potency has been latent. As the type of differentiation is not the same in all cases, the cells must be capable of differentiation in more than one direction, in other words they are multipotent. Furthermore, in view of the diverse directions of their development the cause of their differentiation cannot be intrinsic, but must be sought in differences of environment.

In considering Dr. Richter's communication the reader is struck by the multiplicity of terms which have been used to describe these immature blood cells. Dr. Richter does well to focus attention on the connective tissue as a possible source of origin of some blood cells; as such it is frequently overlooked. It is important to determine the nature of these hæmohistioblasts and in order to do this, it is necessary to go back to the earliest blood cell formation in the embryo. This has recently been done in a very able and interesting way by Dr. Alexander A. Maximow.[1]

The peripheral mesoblast of the very young embryo forms the blood islands. The cells of the

[1] *The American Journal of the Medical Sciences*, March, 1925.

[1] *Physiological Reviews*, October, 1924.

blood islands differentiate in two directions. The peripheral cells form the wall of the first blood vessels, the first endothelium, the central become free and float in the accumulating liquid which represents the blood plasma; they must be regarded as primitive blood cells. Somewhat later the heart and blood vessels arise in the body of the embryo as small cavities lined with flattened mesenchymal cells. The primitive blood cell in the lumen of the yolk vessels becomes differentiated in two directions. The majority of the cells produce hæmoglobin-containing elements, the primary erythroblasts and erythrocytes, which gradually die and disappear after acting for a while as oxygen carriers. The remainder of the primitive blood cells remain as colourless, amœboid, basophilic cells. Dr. Maximow regards the double differentiation of the primitive blood cells as one of the fundamental facts in modern hæmatology. The free, colourless, undifferentiated cells in the lumen of the yolk vessels are carried with the primitive erythroblasts which shortly disappear, into the general blood stream. It is logical to regard them as the first white blood corpuscles of the embryo. They are the common stem cell of all other blood elements in the embryo and in the adult. Dr. Maximow regards as the most appropriate name for them the term hæmocytoblast, used by Ferrata. He criticizes Ferrata, di Guglielmo and Lambin for claiming that the hæmocytoblasts are not white cells at all, but young, highly basophilic, transitional forms from the primitive blood cells to the primitive erythroblasts. He holds that this mistake is partly due to the use of unsuitable technique, especially in regard to dry smears, which always cause grave artefacts in embryonic material. The hæmocytoblasts in the yolk vessels are the same cells as the first "lymphoid" wandering cells of the intravascular mesenchyme. Simultaneously with the formation of the hæmocytoblasts the endothelium of the yolk vessels continues to produce new, free cells. Some of these are hæmocytoblasts, but most of them are new intravascular cells of endothelial origin and are of a different type. They have abundant, highly amœboid, pale, vacuolated protoplasm and a small, irregular nucleus. They are phagocytic and Dr. Maximow calls them endothelial phagocytes. No sharp line of distinction can be drawn between them and the large basophilic hæmocytoblasts. They correspond to the histioid or histiogenous, wandering cells of the mesenchyme and are to be regarded as the first specimens of the histiocytic and monocytic cell types. They remain during the whole life as the chief connecting link between the connective tissue and the blood. It is cells of this type which have been described by Dr. Richter as hæmohistioblasts.

A small number of the endothelial phagocytes and the basophilic hæmocytoblasts may pass into the general circulation. Dr. Maximow holds, however, that there is not sufficient reason to admit the exclusive presence of numerous white blood cells of endothelial origin (the hæmohistioblasts of the Italian school) in the embryonic circulation. He states that defective technique is again responsible.

The yolk vessels are the first hæmatopoietic organ of the vertebrate with meroblastic eggs and of the mammal; in the mammalian embryo the liver is the second and the bone and marrow the third and permanent hæmatopoietic organ. In the yolk vessels some of the hæmocytoblasts proliferate, some of their progeny remain unchanged and may produce megacaryocytes, the majority become transformed into secondary erythroblasts and finally into non-nucleated erythrocytes. The hæmocytoblasts do not become separate from the rest of the mesenchyme once for all. New cells of this type continue to arise from the undifferentiated fixed mesenchyme cells. Soon after the establishment of the general circulation extravascular, basophilic, lymphocytoid hæmocytoblasts appear everywhere in the body of the embryo. They arise from the fixed mesenchymal cells by contraction and mobilization. They are scattered and creep about in the meshes of the mesenchymal framework. They are the "primary wandering cells" of Saxer. Simultaneously appear among the basophilic amœboid wandering cells the "histioid" wandering cells. They are identical with the endothelial phagocytes described before. These histioid cells cannot be separated from the basophilic hæmocytoblasts. The two are modifications of the same fundamental cell; they are a mesenchymal wandering element and are endowed with the same prospective potencies of development. In the adult hæmocytoblasts are free, isolated and are confined more to the blood and lymph and the blood forming organs, whereas the histiocytes are fixed in the connective tissue and the stroma of the blood forming organs. These histiocytes (the hæmohistioblasts of Dr. Richter) are endowed with the power to produce under favourable external circumstances hæmocytoblasts and different types of blood cells.

Dr. Maximow points out that of all the cells of the circulating blood the monocytes (the mononuclear and transitional cells) are the most difficult to explain in regard to relationships and origin. Their histological characters are very similar to those of the free histiocytes. The monocytes cannot be sharply differentiated from histiocytes. A secure basis for the solution of the problem of the origin and the genetic relations of the monocytes in the adult organism has been given by the discovery of histiocytes in the circulating blood. In various experimental conditions the whole of the reticulo-endothelial system, all the histiocytes in the body, enter a stage of functional stimulation. Many of them hypertrophy, become free and are carried into the blood of the right side of the heart. Most of the cells seem to be filtered off by the capillaries of the lungs. Dr. Maximow states that the findings of the new Italian hæmatological school concerning the common occurrence of free histiocytes in the peripheral blood in leuchæmia and so forth have to be accepted with extreme caution. He refers to the findings of Ringoen that the dry smear method can easily produce artefacts. As a results of this lymphocytes and even myelocytes will look like histiocytes.

Abstracts from Current Medical Literature.

MEDICINE.

Juvenile Tuberculosis.

C. PIRQUET (*Wiener Medizinische Wochenschrift*, January 3, 1925) considers that by the end of the school period most Viennese children have tuberculosis. On an average 5% of children in any year are freshly infected. This means that 25% under five and 60% under twelve are tuberculous. Naturally the figures are much lower in countries with better hygienic conditions. The prognosis depends on the age, the extent and localization of the focus and the nutrition of the child. When infection occurs in the first six months of life the outlook is hopeless. During school age it is much better, but at puberty once more becomes doubtful. Tuberculous foci in the brain or meninges are very fatal. Affection of the extremities as well as lymphatic and bony lesions give a good prognosis. Pulmonary lesions in small children frequently heal, but at puberty apical infection is very serious. If the general nutrition can be improved by feeding and fresh air, the outlook is bright, but it is difficult to do this in the presence of anorexia. When tuberculosis is present in a child with a good appetite and general nutrition the prognosis is far from good. Regarding prophylaxis no child should be allowed to live with tuberculous adults and the general nutrition until puberty should be kept at a high level.

Fat Deposits in Gout.

E. EBBSTEIN (*Klinische Wochenschrift*, November 25, 1924) states that fatty deposits in the supra-clavicular fossa and the axilla are frequently seen in patients suffering from chronic arthritis, but have not been described previously in association with gout. He gives the history of a patient whose condition was of long standing. The patient finally suffered from general œdema of the body followed by fatty deposits in both supra-clavicular fossæ and axillæ. There were no lipomata elsewhere. At the *post mortem* examination in addition to that found in these sites, fat was found in the retro-sternal space.

Tabes Dorsalis and Syphilitic Aortitis.

S. KESSLER (*Klinische Wochenschrift*, November 18, 1924) states that two thirds of all patients suffering from tabes have in addition syphilitic disease of the aorta or aortic valves. There is less likelihood of the occurrence of aneurysm in tabes compared with pure aortitis. Many patients with tabes complicated with aortic valvular disease and aneurysm manifest no cardiac symptoms and live to an old age. This is probably due to a milder form of aortitis being associated with tabes. Tabes occurs at an earlier period than aortitis, when the patient is in good health and can keep at his work. Ill health only comes later when paralytic symptoms develope. The importance of this is that aortic lesions are frequently overlooked and in the interests of the patient active specific treatment should be adopted at an early stage.

Fresh Water Lake Disease.

G. ROSENOW AND L. TIETZ (*Klinische Wochenschrift*, October 28, 1924) give the details of a new disease noted among the fishermen of the fresh water lakes adjoining the Gulf of Danzig. Since July four hundred cases have been reported with three deaths. The men go out in the evening and between 2 a..m. and 6 a.m. are suddenly seized with acute pain in the neck and lumbar region and later in the arms and legs. Movements both active and passive are very painful. Dyspnœa and a feeling of coldness in the hands and feet are noted. This is followed by severe pains in the lower part of the abdomen and the passage of dark, coffee-coloured or reddish urine. The muscular pains disappear in about three days, while the urine becomes normal on the second or third day. A feeling of lassitude remains for some time and recurrences frequently occur when the men return to work. Many have had as many as eight attacks. In the acute stage the victims look really ill and remain flat on their backs, any movements causing severe pain. There is no œdema nor hyperæsthesia of the skin. The extremities are cold and cyanotic. Pupils react normally and eye movements are free and painless. The lips are slightly cyanotic and the tongue coated and dry. Respiratory movements are restricted and accelerated. The pulse is weak and its rate varies from 80 to 105. The systolic blood pressure varies from 110 to 135 millimetres of mercury and the temperature is generally normal or at most 37.8° C.. There is no enlargement of the liver or spleen. The reflexes are normal and the Babinski type of reflex cannot be elicited. It is found that the first sample of urine passed contains methæmoglobin together with albumin and urobilin. Later specimens contain mainly urobilin, hyaline casts and occasional red corpuscles, but no methæmoglobin. The urine soon becomes normal. The muscular pains were treated with "Atophanyl" injections. *Post mortem* examination in the fatal cases revealed severe necrosis of the epithelial cells of the urinary tract similar to corrosive poisoning. The spleen was normal and the gastro-intestinal tract contained nothing pathological. No organisms were cultivated from the blood of persons freshly infected. The authors consider that the attack may be due to some poisoning from neighbouring industrial works. It may be caused by some gas-forming poison which attacks primarily the red corpuscles. Investigations are proceeding regarding the possibility of arsenical poisoning.

S. MEYER (*Klinische Wochenschrift*, November 25, 1924) draws attention to the close resemblance of the endemic disease noted among the fishermen of the lakes adjoining the Gulf of Danzig to paralytic hæmoglobinuria in horses. There is the same sudden onset with muscular pains and spasms in the extremities followed by hæmoglobinuria. Recovery may be quick or delayed and recurrences are frequently noted. In horses there is muscular degeneration, the muscles resembling the flesh of fish in appearance. Milder forms are characterized by strands of yellow between the normal muscles bundles. From experiments it has been proved that the hæmoglobin in the urine comes from two sources, the muscles and the red cells. One case in man similar to that in horses has been recorded.

Blood Transfusion.

H. ZIELKE (*Klinische Wochenschrift*, October 7, 1924) states that transfusion is performed either to replace blood which has been lost or to stimulate the regenerative power of the blood corpuscles. He prefers to use the Oehlecker method of injecting five to ten cubic centimetres of the donor's blood and waiting to see if any untoward symptoms occur. If none are observed, he injected from two hundred to three hundred cubic centimetres of blood in normal saline solution. Donors should be healthy men about twenty-five to thirty-five, whose serum should have been subjected recently to the Wassermann test. Evidence of malarial infection must also be sought. He describes the various routes of injection and finally pays special attention to the value of the reinfusion of fresh blood in cases of ruptured ectopic gestation, ruptured liver and spleen.

Heliotherapy in Tuberculosis.

N. A. MYLL (*Journal of Radiology*, November, 1924) describes the practice of heliotherapy in the treatment of extra-pulmonary tuberculosis. The author considers that tuberculosis of the bones and joints, the skin, the glands and the genital system is curable if treated in early and hopeful stages. Solar radiations are conveniently grouped into two classes, namely, those of the visible and those of the invisible spectrum. All these rays produce heat, light and chemical activities. It is not possible to say whether therapeutic results are due to vaso-dilatation and deep penetrating rays or to chemical action of the active rays. Higher altitudes are preferable as a higher percentage of ultra-violet rays is present where sunlight is not subject to filtration through the lower altitude atmosphere. In the summer time patients are exposed in the early morning and in the winter time at mid-day. The affected parts are exposed for five to

ten minutes at first and gradually longer exposures are given until the whole body, except the head, is exposed for two hours daily. Exposures should not be given within half an hour of a meal. Glandular enlargement rapidly decreases under treatment and when sinuses exist the wound is treated with a photodynamic dye before exposure. In bone and joint tuberculosis a partial immobilization is recommended and weight bearing on a joint is not allowed. In joint disease light types of massage are of value. Very good results follow heliotherapy in serous tuberculosis and in genito-urinary infection. It is a good plan to have patients engaged in some light occupation, such as basket weaving, leather work, reading or school work during the period of treatment which may be quite a long one.

Noguchi Reaction.

J. JUSTUS (*Wiener Medizinische Wochenschrift*, December 20, 1924) gives his experiences with the luetin reaction of Noguchi in the diagnosis of syphilis. In seventeen cases of early syphilis sixteen positive results were obtained. At a later stage reactions were obtained in twenty-one instances. With the exception of one, fourteen persons with congenital syphilis yielded reactions. In five families comprising twenty-five people positive results were obtained. In seven married couples similar results were found. No reactions were noted in the case of two persons with suspicious skin lesions, but no other signs of *lues*. One patient with tuberculosis yielded no reaction and a reaction was obtained in a patient with tabes. The author concludes that the reaction is of great value, especially in conjugal, maternal and familial syphilis.

Neurosyphilis.

J. H. STOKES AND L. W. SHAFFER (*The Journal of the American Medical Association*, December 6, 1924) give some results of treatment at the Mayo Clinic of four hundred and five patients suffering from neurosyphilis. A minimum of two courses of treatment was given in each instance. A course was represented by six injections of "Arsphenamin," 0.1 gramme for each eleven kilograms body weight at weekly intervals, twenty to thirty daily intramuscular injections of mercuric succinimide simultaneously with the above, a month's rest and then forty daily inunctions of mercury (2 to 3.25 grammes). If this treatment did not definitely improve the patient's condition both clinically and serologically, "Arsphenamized" serum was injected into the theca every two weeks in conjunction with the weekly "Arsphenamin" injections or the "Arsphenamin" course was doubled (given twice a week for eight weeks) with mercury and iodide of potassium simultaneously and/or coincidently with mercury and "Arsphenamin." One to ten grammes of sodium iodide were given intravenously each day for twenty to thirty injections. The conditions were classified as far as was possible into parenchymatous, meningeal and vascular types, absolute differentiation into types being impossible as a combination of two or more types was common. Two criteria of improvement were adopted, clinical and pathological, the most stress being laid on how the patient's symptoms were affected, but the state of the cerebro-spinal fluid in regard to cytology and the Wassermann reaction was carefully studied and vigorous endeavours were made to render the fluid normal, providing no harm was done to the patient clinically. Of thirty-three patients with early and late symptoms of meningeal neurosyphilis, 84% became clinically and serologically normal. Of sixty-seven with combined meningo-parenchymato-vascular syphilis, 57% showed excellent results with return to normal. Of one hundred and seventy patients with tabes two were cured and 63% manifested excellent or good results. In general paralysis and "*paresis sine paresi*" only temporary good results were obtained and in vascular neurosyphilis 37% showed good results. The authors maintain that systematic and thorough treatment of neurosyphilis gave much better results than heretofore supposed.

Effort Syndrome.

W. B. PORTER (*Annals of Clinical Medicine*, December, 1924) reports careful investigation of eighty-two cases of effort syndrome in ex-soldiers. He summarizes the opinions of former observers. Deficient lung capacity, incipient tuberculosis, infection, hyperthyreoidism and heart disease have all been considered as causative factors, but there has been no proof that any of these factors are the basis of the condition. Of the eighty-two patients studied seventy-six were originally regarded as suffering from organic heart disease in 1919. Using every means of examination the author was able to find only fourteen cases of organic disease, twenty-seven were normal and forty-one manifested effort syndrome. The symptoms in the latter were præcardial pain, dyspnœa, fatigue, palpitation, giddiness and fainting; the extremities were cold, clammy and cyanotic frequently, there was sweating and tremor, the pulse was rapid and easily increased by exertion, the apex beat was diffuse and often forcible, systolic murmurs and thrills were often present. In the patients with organic heart disease there were definite histories of rheumatic fever, chorea, severe tonsillitis or syphilis or else diastolic murmurs were present. In those with effort syndrome other infections (especially influenza) and gas were common precursors. It was pointed out that the diagnosis of heart disease did untold harm to the patient. Satisfactory domestic and economic states did more to influence favourably the condition of effort syndrome than any other condition. A systolic murmur *per se* in the absence of hypertrophy and a definite history of rheumatic fever were not sufficient evidence of heart disease. Lewis concluded that a systolic murmur was of no value in estimating the capacity for work irrespective of the character, conduction or point of maximum intensity of the murmur.

Infant Feeding.

D. PATERSON AND R. DARBY (*The Lancet*, January 31, 1925) present a new method for estimating the amount of food required by an infant. They carefully analysed the results of feeding in fifty normal or overweight infants and fifty wasted infants and from these results they have drawn up a table showing the amount of food necessary per pound bodyweight in infants per day. The figures presented are approximate. The fatter the infant, the less food it requires; active or crying infants require more food than inactive ones which sleep well; all infants require less food in warm than in cold weather. Apart from these expected variations the following amounts represent the necessary food for normal infants: breast milk, two and a quarter to two and a half ounces per pound bodyweight per day; whole cow's milk, one and threequarter ounces per pound per day with added water up to two and a half ounces and sugar half a drachm per pound per day and one drachm of cream or emulsion of cod liver oil thrice daily; dried milk (full cream), "Glaxo," "Cow and Gate" and so forth, two drachms in two and a half ounces per pound per day with sugar added as above; dried milk food (humanized, "Prescription Glaxo," "Humanised Trufood" and "Allenbury's Number I."), two and a half drachms in two and a half ounces of water per pound per day. Wasted infants, excluding those with organic disease, should be given sweetened condensed milk (Nestlé's) three to four drachms per pound per day with one drachm emulsion of cod liver oil thrice daily; dried milk (full cream), "Glaxo" and so forth, two and a half drachms with half a drachm of sugar per pound per day with cod liver oil as before; dried humanized milk food ("Allenbury's Number I." *et cetera*), three drachms per pound per day; or cow's milk (unboiled, boiled or peptonized), two ounces per pound bodyweight per day with sugar, cod liver oil and water as before. Not more than two and a half ounces of fluid per pound bodyweight should be given per day. Paterson and Darby consider that the above amounts more nearly approximate to the requirements of infants than the amounts usually said to be necessary which are based on the age of the infant irrespective of its weight. The above figures were calculated from the results of feeding one hundred infants, all of whom thrived on one of the diets mentioned.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on April 3, 1925, DR. V. MCDOWALL, the President, in the chair.

THE PRESIDENT welcomed Dr. E. M. Humphery, a member of the Council of the New South Wales Branch.

Ectopia Vesicæ.

DR. D. A. CAMERON showed a patient suffering from *ectopia vesicæ*. He had transplanted the ureters into the colon (see page 509).

Siderosis.

DR. J. LOCKHART GIBSON showed an eye in order to demonstrate the condition of siderosis. A piece of steel had been removed from the fundus ten days previously after being in the eye for one year.

Renal Calculus.

DR. E. S. MEYERS showed a skiagram of a renal calculus lying in the upper calyx of a kidney and blocking the minor calyces.

Injuries to the Hands.

DR. GIFFORD CROLL, C.B.E., showed a man who had been the victim of a blasting accident to his hands. The cuticle had been completely destroyed and while the hands were kept in antispetic baths and while they were fomented much sand and many small stones had emerged from the deeper structures. These had apparently been driven inwards by the force of the explosion. Rapid healing had taken place without the necessity of skin grafting. Six months later numerous small stones had still been present in the hand and as many as possible had been removed. In another three months more had come nearer the surface and their removal had been more difficult owing to fibrosis which necessitated the dissection of each stone from its fibrous bed. At the time of demonstration Dr. Cameron was removing the stones under local anæsthesia whenever they reached the surface. The man had a very fair amount of use for his hand.

The Hand in General Practice.

DR. D. A. CAMERON read a paper entitled "The Hand in General Practice" (see page 499).

DR. A. V. MEEHAN referred to the necessity for a complete examination of the hand in all cases of injury. Frequently the skin incision only was inspected, whilst there might be much more extensive damage to the tendons than was suspected. It was easy to forget the presence and the functions of the intrinsic as well as the extrinsic muscles. He referred to the flexor and extensor actions of the lumbricals and interossei muscles. The prognosis of recent tendon injuries varied inversely with the degree of sepsis present. When the extensor tendons were divided, the prognosis was better than when the flexors were severed. In the treatment of severed tendons sepsis was to be avoided by gentle handling of the tissues, by the removal of infected material and by the non-introduction of foreign bodies into the wound. General anæsthesia was apparently essential, as was also the application of a tourniquet to the forearm and not to the arm. In this way there was less risk of pressure on nerves. If sepsis supervened, the wound should be opened up. A splint should be applied for a week, then removed daily and slight active movements of the hand should be encouraged. The splint should finally be removed after the second week.

DR. NEVILLE SUTTON said that he had been asked to discuss the subject of injuries to the carpus and wished to say straight away that he intended to talk of two lesions only, namely, fractures of the scaphoid and dislocations of the semilunar bone. These were by far the most common of the more severe injuries to the carpal bones. Fractures of the other bones were very much more rare and were not such definite clinical entities, whereas the two lesions under consideration were quite typical in their causation, clinical signs and diagnosis.

The importance of these lesions depended on: (i.) their frequency; (ii.) the disability which they caused; (iii.) the fact that the diagnosis could be made with great degree of certainty if they were diligently sought for, but they were often missed; (iv.) the very definite indications for treatment which they presented.

The actual frequency of such injuries was difficult to state exactly, but it had been estimated many years previously that fractures of the scaphoid formed 0.5% of all fractures. The late J. B. Murphy had considered this estimate too low and had said that 1% to 2% would be closer to the mark. This was quite a considerable number when it was realized that the commonest fracture in the body, Colles's fracture of the distal end of the radius, formed only 10% of all. In 1922 A. H. Bizarro had collected one hundred and twenty-three cases of carpal injuries from his own practice and from the Royal Herbert Hospital, Woolwich, and had found that the scaphoid was fractured alone in sixty-eight cases (55%) and in combination with fracture or dislocation of other bones in thirty-eight cases, making one hundred and six cases in all with fractures of the scaphoid. In the same series the semilunar had been fractured or dislocated in twenty cases and the *os magnum* injured fifteen times. The history of the injury which caused these fractures of the scaphoid was of importance. It was usually indirect violence of considerable degree, a fall on the palm of the hand with the wrist in extension, or a back fire when starting a car when the hand had remained on the starting handle. The hand was usually in abduction, radial deviation, but might be in adduction. Fracture might occur with the wrist in hyperflexion, but this was rare. Direct violence should also be reckoned as a cause of fracture and was apt to give rise to comminution and fracture of neighbouring bones. There were several different types, the commonest being a transverse fissure or complete break across the middle of the bone, often called "snapped waist" fracture. When the hand was in adduction at the time of the accident there was apt to be a mere avulsion of the tubercle. Fractures of the distal end of the radius and ulna and of other carpal bones were sometimes associated lesions, as was also dislocation of the semilunar bone, and one of the fragments of the scaphoid, usually the proximal, might be dislocated backwards or forwards. The patients were usually males at the active period of life from fifteen to forty-five years of age. The symptoms and signs were: the history of a fall on the outstretched hand or a similar accident; pain in the wrist which was usually severe, immediately after the injury; swelling almost at once, never very extensive nor extreme, most evident in the region of the anatomical snuffbox and round the radial half of the wrist joint; tenderness which was acute and localized to the scaphoid and which was best elicited with the patient's hand in slight flexion and adduction in which position pressure in the anatomical snuffbox distal to the radial styloid gave rise to exquisite "wincing" pain which was very definite and almost diagnostic. There was limitation of movement and the hand was held fairly rigid for some time after the injury, but extension was always restricted and painful. Ecchymosis did not usually occur and crepitus was rare and, if present, usually denoted comminution of the scaphoid or fracture of other bones in addition. The result of the knuckle percussion test of Vaughan, if positive, was of value. From a consideration of these signs and symptoms and an appreciation that the seat of the trouble lay just distal to the styloid process of the radius a definite diagnosis could be made in practically all cases of fairly recent injury. Skiagrams should be taken in two directions in all cases. It should be remembered that with the hand in line with the forearm the normal scaphoid was inclined in an anterior, lateral and distal direction at an agle of about forty-five degrees with the axis of the forearm. The scaphoid had been

compared to a peanut in shape and this was quite apt in that it had two expansions joined by a narrow waist. To prevent superposition of these two expanded portions in the radiogram careful centering of the tube was necessary and the hand should be adducted as much as possible to bring the scaphoid out from the radius and approximate its long axis to that of the forearm. It was advisable to take both wrists together in this position for comparison. Radiograms were not always conclusive, especially if these precautions are omitted and a picture resembling a fracture very closely was seen when the distal expanded end was superimposed on the remainder of the bone. Stereoscopic views were an additional aid. Without treatment or with massage and movement instituted soon after the injury the fractured bone did not unite. The scaphoid had little power of repair or of callus formation, probably for several reasons. The fracture was intraarticular and bathed with synovial fluid and the blood supply might be interfered with, although the ligamentous attachments of the bone were extensive along the dorsal groove. In the case of non-union the wrist was usually permanently damaged, restriction of extension was always present, hard manual labour was impossible, recurrent pain on certain movements occurred and often a definite arthritis developed. There had been many reports of union occurring between the two fragments when treatment by immobilization on a splint had been practised and this treatment was definitely indicated. A cock-up wrist splint should be applied and kept on for three or four weeks and finger movements and massage should be allowed on the splint after a week. When the splint was removed, mobilization and the usual physiotherapy were advisable. If the fracture was a simple "snapped waist," union was quite likely to be secured with a good result, even if no union took place, the wrist might be quite useful and painless if so treated. In cases in which a fragment was dislocated, an attempt should be made to reduce it and carry out the splinting. If reduction was not effected and in cases of comminution it was advisable to cut down immediately and remove the fragments by open operation. It seemed to make little difference whether both fragments or only the proximal one was removed. In those cases in which union was not secured or in patients not seen in the first few weeks after injury when stiffness and pain persisted in spite of physiotherapy, it was advisable not to delay operative removal of fragments too long, because arthritis was set up in the carpus. This was progressive and when once well established could not be cured by removal of the fragments of the scaphoid. The wrist would probably remain painful and weak after operation and the results were very uncertain.

Dr. Sutton stated that he would deal very briefly with the subject of dislocation of the semilunar. This was brought about by much the same accident as that which caused fractures of the scaphoid, severe violence applied to the palm in hyperextension. The two injuries were often associated. There were three degrees of dislocation, the first degree was really a luxation of the head of the *os magnum* over the dorsal horn of the semilunar, the latter remaining more or less in its normal position articulating with the distal end of the radius. This was more properly called an *os magnum* retro-lunate luxation. In the second degree the posterior radio-lunate ligament was torn and the semilunar swung anteriorly on its ventral horn as a pivot, the head of the *os magnum* pressing it in this direction and itself practically articulating with the radius. The third degree of dislocation was reached when the semilunar lay anterior to the distal end of the radius. These lesions were capable of clinical recognition. The chief sign was a silver fork deformity which was most noticeable in the first stage when the posterior hump was formed by the head of the *os magnum*, and which was to be distinguished from a Colles's fracture by the fact that the lump was distal to the end of the radius. There were a shortened appearance of the palm and wrist; tumour under the flexor tendons of the wrist; stiffness of the fingers which were held partially flexed, motion being painful; recession of the knuckle of the third metacarpal usually the most prominent. There might be associated lesions, the commonest being fracture of the scaphoid and avulsion of the styloid process of the ulna. Radiograms confirmed the diagnosis, the condition being better seen in the lateral view. Recent dislocations could be reduced by manipulation even after the fifth week, but of course the earlier after the accident the easier reduction was effected. The necessary manipulations consisted of hyperextension of the wrist, pressure applied by the thumbs of an assistant on the dislocated bone and then hyperextension of the wrist, pressure applied by the thumbs of an assistant on the dislocated bone and then hyperflexion. If manipulations were unsuccessful, reduction could usually be effected by open operation. If reduction was impossible and in old standing cases in which the median nerve might be damaged by pressure, the bone should be excised together with one or both fragments of the scaphoid if fractured.

Radiograms were then shown by Dr. Sutton to illustrate various types of fractures of the scaphoid and dislocation of the semilunar bone.

Dr. D. E. Trumpy said that the miners of the Ipswich area frequently complained of a jarred hand caused by pushing on the drill or the pick. The whole hand became swollen with the fingers semi-flexed but with little involvement of the thumb. The condition was probably due to a hæmatoma with laceration of the deeper structures complicated by infection from the skin. In the majority of instances the infection lay in the middle palmar space under the deep fascia. An incision should be made over the most painful spot, generally between the second and third fingers and a forceps should be passed through the lumbrical space into the middle palmar space. It was always necessary to use a general anæsthetic before attempting to do anything to these conditions. He also referred to the fact that in many cases of "sprained wrist" the lesion was really a fracture of one of the small bones of the wrist, especially the scaphoid.

Dr. E. M. Humphery agreed with Dr. Cameron that all hand injuries should be treated seriously and that a general anæsthetic was essential. Immediate relief and rapid healing of septic fingers followed free incisions and the alternate use of saturated solutions of bicarbonate of soda and boracic acid. When drainage was indicated he preferred to use soft rubber tubing which had been split in spiral fashion. He referred to the small tumours of the hand about the size of a mulberry which were commonly seen in dairying centres. These healed rapidly after scraping and the use of carbolic acid. In his experience many ganglia frequently disappeared without any treatment. In replacing dislocations he preferred to manipulate the bones with his fingers rather than to use great traction.

Dr. P. de Luca asked Dr. Cameron whether he gave polyvalent serum before or after he incized the hand in cases of lymphangitis.

Dr. S. F. McDonald laid stress on the need of avoiding injury to the cutaneous nerves when planning incisions. The position of the hand when the splint was applied after suture of the extensor tendons also made a lot of difference to the comfort of patients.

Dr. V. McDowall after thanking Dr. Cameron for his valuable paper stated that these mulberry growths were common in dairying centres. The affected person generally came from farms on which the herds were affected with cow pox. He had seen them also on the lip and in this situation they might be mistaken for epithelioma.

Dr. D. A. Cameron thanked those present for the reception of his paper and especially those who had opened the discussion. He seldom used a splint in the disabilities which he had described and which did not include fractures. He advocated general active movements, especially when the hand was in a bath. With regard to the use of serum he always gave it at once if the infection was a streptococcal one. Pus was always evacuated as soon as possible.

Letter of Congratulation to the Parent Association.

It was resolved that a letter of congratulation be sent by Dr. W. N. Robertson, C.B.E., to the parent Association on the occasion of the opening of the new premises.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

McArthur, Alexander Christie, M.B., Ch.M., 1892 (Glasgow), 104, Fitzroy Street, Grafton.
Hill, Harry Roland, M.B., Ch.M., 1924 (Univ. Sydney), Cliff Street, Manly.
Davidson, Christopher Harold Montgomerie, M.B., Ch.M., 1924 (Univ. Sydney), Seaview and Victoria Streets, Ashfield.
Meredith, John Baldwin Waters, M.B., Ch.M., 1923 (Univ. Sydney), Weston, New South Wales.
Kirkland, Keith Lindsay Hugh, M.B., Ch.M., 1925 (Univ. Sydney), 106, Belmont Road, Mosman.
Egan, Edward Charles, M.B., Ch.M., 1924 (Univ. Sydney), 25, Denison Street, Waverley.

Medical Politics.

NATIONAL HEALTH INSURANCE.

(*Continued from Page* 495.)

Superannuation Benefit.

Superannuation Benefits Available.

(i.) *Mutual Benefit Associations et cetera.*—Mutual benefit associations do not provide for the whole range of benefits which come within the scope of a comprehensive national insurance scheme, but they mainly aim at partial relief during temporary incapacity and to a very limited extent towards assistance during an extended period of invalidity. They fail to make any adequate provision for permanent incapacity to work as the result of invalidity or old age. In more recent legislative enactments in various countries old-age pensions are payable not as a matter of charity, but in the majority of cases are included within the scope of compulsory national insurance. It has been suggested that the payment of old-age pensions on the basis of services rendered to the community tends to discount thrift, whilst voluntary schemes fail to attract other than the more thrifty. There is no evidence, however, to support the former suggestion.

The objects of certain friendly societies include provision for the establishment of a superannuation fund for aged members, but no society at present provides superannuation benefits as such for its members, although in some instances small financial relief for a member between the ages of sixty and sixty-five is made available, whilst in other societies the contributions of all members over age seventy are paid by the society and there appears to be a desire that this provision should be adopted generally as soon as the societies' financial position will enable it to be arranged. Very few trade unions have instituted superannuation schemes for their members and where such are made available they generally provide for a small weekly benefit varying according to the number of years during which contributions have been paid by the member. Numerous Government, municipal, banking, financial and other institutions have established superannuation funds for their employees, the benefits payable varying according to the nature of the institution. In some cases it is compulsory for all employees to join the superannuation fund, whilst it is voluntary in others and occasionally provision is made for voluntary contributions towards a benefit additional to that which must be compulsorily contributed for. The employers generally pay the cost of administration of the fund and a subsidy in respect of each member. It has not been possible to definitely ascertain the total membership of the various superannuation funds at present in operation in Australia, but it is estimated at approximately 140,000, the great majority of whom are public servants. In the Commonwealth Public Service superannuation scheme at the end of 1923 there were 26,644 officers contributing with an average salary of about £235 *per annum* for an average pension of £1 17s. per week payable at age sixty-five. The usual pensions provided in the large schemes are based on the unitary system, whereby the employee contributes for so many units of pension in accordance with the rate of wage or salary earned, the contributions being deducted from the employee's wages and the amount of pension automatically increasing with wage until the maximum pension is reached. Pensions are paid to employees on retirement through old age, generally at sixty to sixty-five years. The funds are on a sound actuarial basis, with the contributions varying according to the age of the employee on joining the fund and sometimes special concessions are provided in respect of employees who at the inception of the scheme were above a certain age. Such funds can necessarily only be provided where there is continuity of employment, as the right of pension terminates with employment, in which case a refund of contributions is generally made, temporary employees not being eligible for membership. The cost to employers is usually heavy and it is thus only possible for employers who are in a large way of business, to establish such superannuation funds. It is desirable that something be done to enable others to provide old-age pensions for their employees and it has been suggested that if such pensions are not made available under national insurance, the alternative would be to encourage employers by the assistance of a Government subsidy to provide pensions voluntarily, but similar optional arrangements have failed in other countries to achieve their objects. Many life insurance companies provide for the purchase of annuities and several small firms have been able to provide superannuation benefits for their employees by this means. State Governments and charitable organizations also assist in the maintenance of homes for the aged.

(ii.) *Commonwealth Old-Age Pensions.*—The payment of old-age pensions under the *Commonwealth Invalid and Old-Age Pensions Act* commenced on July 1, 1909, and that portion of the Act which authorizes payment to women attaining the age of sixty years came into operation on December 15, 1910. Under the Act an old-age pension of 17s. 6d. per week is payable to every male aged sixty-five and over and to every female aged sixty and over, subject to certain property, income and length of residence qualifications. The rate of pension was originally 10s. per week, but was increased to 12s. 6d. in October, 1916, to 15s. in January, 1920, and to 17s. 6d. in September, 1923. Documentary evidence must be produced as to the age of the claimant for old-age pension or the commissioner may himself accept the claimant's statement as to age if no documentary evidence is available. The financial status is in the first place dependent upon the statutory declaration of the applicant who must then appear before a magistrate for examination thereon, reference being made also to the police. Once a year pensioners are required to submit a further statement of their financial position. At June 30, 1924, the annual liability of the Commonwealth Government in respect of old-age pensions payable to 113,054 pensioners was £4,927,780; 80% of the pensioners were in receipt of the full pension, the average pension being 16s. 9d. per week.

Statistics indicate that of every hundred people born in Australia, approximately fifty will be living at age sixty-five and of these sixteen, representing 32% of the survivors at that age and 16% of those born in Australia, will be claimants for the old-age pension. Practically no variation has taken place since the institution of the Commonwealth old-age pension in the percentage of the population of eligible age who claim the pension, but it is an astounding fact that one in every six persons born in Australia will eventually become a claimant for the old-age pension. At June 30, 1912, 34,897 males and 44,174 females, totalling 79,071 persons, were in receipt of Commonwealth old-age pensions, being equivalent to 33% of the male population, 31% of the female and 32% of the total population eligible according to age. At June 30, 1924, the numbers in receipt of old-age pensions had increased to 45,117 males and 67,937

females, totalling 113,054 persons and equivalent to 34% males and 32% females and approximately 33% of the total population at the eligible ages, the larger number of females being due to the fact that women are admitted at age sixty. Australian conditions tend towards a greater probability of people reaching old age than in other countries and this fact must be taken into consideration when ascertaining the necessity that adequate superannuation benefits should be provided under national insurance in Australia.

At the census of 1881 the number of males aged sixty-five and over in Australia was 34,433, representing 2.8% of the total male population; the number of females aged sixty years and over at the same date was 37,281, representing 3.6% of the total female population. At the census of 1921 the number of males had increased to 122,841 or 4.5% and the females to 194,983 or 7.3% of the male and female population respectively in the above-mentioned age groups and a comparison with other countries shows that the age distribution of the Australian population is steadily approaching that of older countries.

When old-age pensions were first introduced they were surrounded with so many restrictions that it has been suggested they were allowances in case of poverty and consequently applicants did not like having such an imputation placed upon them. Nowadays there is less reluctance to claim the pension and the number of claimants, so it is stated, is now greater because of the liberalization of the scheme and the greater adequacy of the pension which now attracts more people, especially as the cost of living has increased considerably in recent years. It will be seen, however, from the above-mentioned statistics that although the number of old-age pensioners has increased very considerably, the percentage of the population eligible according to age in receipt of such pensions has remained practically stationary, the increase in numbers being due to the growth in population and to the fact that, as previously indicated, a greater percentage of the population is now in the eligible age groups. During the year ended June 30, 1924, 1,545 old-age pension claims were rejected mainly owing to the property and income clauses of the Act and it is desirable that under national insurance a definite superannuation benefit should be paid to every insured person, irrespective of property or income qualifications.

Superannuation Benefit Recommended.

The average working life of the wage-earner varies in the several industries and a satisfactory basis of insurance for all wage-earners is possible under a national scheme only, as under sectional schemes the varying circumstances are advantageous to a group of wage-earners in some instances and disadvantageous to others. The provision of an adequate superannuation benefit under national insurance is a great incentive to the wage-earner as it assists him to provide against impecunious old age, the possibility of which probably weighs more heavily upon him than the risks of sickness or accident. A systematic method of providing for a definite superannuation benefit will grant such relief that the wage-earner will be enabled to give more effective consideration to the questions associated with the proper upbringing and maintenance of his children. It has been suggested that an annuity system should be instituted enabling those who so desire, to contribute for a larger amount of pension, as such provision should be attractive to many who are in receipt of higher wages, but where such optional provisions have been included in national schemes in other countries they have not proved satisfactory, owing to the inability of many wage-earners to accurately forecast their capacity to regularly pay the additional contributions required, with the result that many members discontinue contributing for the higher benefits. Benefits and contributions based on wages make the system very complex and necessitate a very appreciable increase in the administration cost of the scheme which is not compensated for by the increase in benefits.

The weekly rates of contribution required to provide a superannuation benefit of 20s., 30s. and 40s. per week, payable to males after attainment of age sixty-five and to females after age sixty, are as follows:

SUPERANNUATION BENEFIT—WEEKLY RATES OF CONTRIBUTION.

Age at Entry.	Males (to Age 65), Per Week.						Females (to Age 60), Per Week.					
	20s.		30s.		40s.		20s.		30s.		40s.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
16	0	9.4	1	2.0	1	6.7	1	7.3	2	5.0	3	2.7
17	0	9.8	1	2.8	1	7.7	1	8.4	2	6.6	3	4.7
18	0	10.4	1	3.5	1	8.7	1	9.5	2	8.2	3	6.9
19	0	10.9	1	4.4	1	9.8	1	10.6	2	9.9	3	9.3
20	0	11.5	1	5.2	1	11.0	1	11.9	2	11.8	3	11.7
21	1	0.1	1	6.2	2	0.2	2	1.2	3	1.8	4	2.4
22	1	0.8	1	7.2	2	1.6	2	2.6	3	3.9	4	5.2
23	1	1.5	1	8.2	2	3.0	2	4.1	3	6.2	4	8.2
24	1	2.2	1	9.4	2	4.5	2	5.7	3	8.6	4	11.5
25	1	3.0	1	10.6	2	6.1	2	7.5	3	11.2	5	2.9
26	1	3.9	1	11.9	2	7.8	2	9.3	4	2.0	5	6.6
27	1	4.8	2	1.2	2	9.6	2	11.3	4	5.0	5	10.7
28	1	5.8	2	2.7	2	11.6	3	1.5	4	8.2	6	3.0
29	1	6.9	2	4.3	3	1.7	3	3.8	4	11.7	6	7.6
30	1	8.0	2	6.0	3	4.0	3	6.3	5	3.5	7	0.6
31	1	9.2	2	7.9	3	6.5	3	9.0	5	7.5	7	6.0
32	1	10.6	2	9.8	3	9.1	4	0.0	5	11.9	7	11.9
33	2	0.0	3	0.0	4	0.0	4	3.1	6	4.7	8	6.3
34	2	1.5	3	2.3	4	3.1	4	6.6	6	9.9	9	1.3
35	2	3.2	3	4.8	4	6.4	4	10.4	7	3.6	9	8.9
36	2	5.0	3	7.5	4	10.0	5	2.6	7	9.9	10	5.2
37	2	7.0	3	10.5	5	2.0	5	7.2	8	4.7	11	2.3
38	2	9.2	4	1.8	5	6.3	6	0.2	9	0.3	12	0.4
39	2	11.5	4	5.3	5	11.1	6	5.8	9	8.6	12	11.5
40	3	2.1	4	9.2	6	4.3	6	11.9	10	5.9	13	11.9
41	3	5.0	5	1.5	6	10.0	7	6.8	11	4.3	15	1.7
42	3	8.1	5	6.2	7	4.3	8	2.6	12	3.9	16	5.1
43	3	11.6	5	11.4	7	11.3	8	11.3	13	4.9	17	10.6
44	4	3.5	6	5.3	8	7.0	9	9.2	14	7.7	19	6.3
45	4	7.8	6	11.8	9	3.7	10	8.4	16	0.7	21	4.9

(i.) Your commissioners recommend that a superannuation benefit of 20s. per week be payable to male insured members after attainment of age sixty-five and to female insured members after attainment of age sixty.

(ii.) Your commissioners are of the opinion that the existing rights of pensioners under the *Commonwealth Invalid and Old-Age Pensions Act*, 1908-1923, should not be interfered with.

As previously stated, your commissioners are now taking evidence with respect to the further question of amending the *Commonwealth Invalid and Old-Age Pensions Act*, 1908-1923, so as to provide for the payment of destitute allowances, which inquiry will form the subject of a separate report.

Funeral Benefit.

Australian Mortality Experience.

In the various schemes where provision has been made for the payment of sickness, invalidity and superannuation benefits, it has generally been found necessary to take into consideration the question of providing a funeral benefit for the members, as the demand for this benefit has always been very popular in such funds. With the exception of New Zealand, where the death rate is 9.0 per thousand of the mean population, Australia's death rate of 9.9 per thousand is the lowest in the world, the rate for Great Britain being 11.7 and for the United States of America 11.8. The male death rate for Australia in 1923 of 10.9 per thousand of population was considerably higher than the female rate of 8.8, notwithstanding the fact that the sickness experience of females is much heavier than that of males. The mortality rate for those under one year of age was equivalent to 58.4 deaths per thousand of population under that age; for the group aged one year and under twenty years the rate was 2.5, twenty years and

under forty years 3.8, forty years and under sixty years 10.1 and sixty years and over 56.6, approximately two thirds of the population being within the age group one year and under forty and subject to a much lower death rate than those in the other age groups. The heaviest mortality is experienced in the group under one year of age and indicates the necessity that adequate steps should be taken to remedy this heavy annual loss of life, which represents one seventh of the total deaths.

An inquiry made in respect to the decennium 1901-1910 revealed the fact that the probable lifetime of males born in Australia was 64.3 years, as compared with 58.3 years in England and Wales and 57.4 years in the United States of America, that for females being for Australia 68.5 years, England and Wales 62.9 years and the United States of America 61.9 years and this factor of longevity has an important bearing in the annual contributions required toward the cost of benefits under any proposed national insurance scheme in Australia, where conditions are apparently favourable towards longer lives than those experienced in other countries. During the year 1923 the total number of deaths in Australia was 56,236, of which 31,622 were males and 24,614 were females. Of the males that died in that year 4.2% were engaged in professional occupations, 2.5% domestic, 9.2% commercial, 6.1% transport and communication, 30.1% industrial, 18.7% agricultural, pastoral, mining, 23.3% were dependants and 5.9% occupation indefinitely stated and when the numbers engaged in these occupations are taken into consideration, it is apparent that the heaviest rate of mortality is amongst industrial workers, who represent the largest section in need of the assistance of a national insurance scheme.

The mortality rate for the whole population of Australia is stated to be heavier than that for friendly society members; the average mortality rate per thousand members of three of the leading Victorian friendly societies was 9.7 as against 13.9 for the Australian population of similar ages; in Tasmania for the year 1922 the mortality rate of friendly societies per thousand members was 7.7 as against 11.4 for the total population, which indicates that friendly society members are owing to the restrictions as to age and physical standard selected lives.

Funeral Benefits Available.

(i.) *Mutual Benefit Associations.*—Friendly societies generally provide for the payment of a funeral benefit at the death of a member and the majority of members are contributing for such benefit, the cost of funeral benefit varying in accordance with the age of the member when joining. The *Friendly Society Act* in each State prescribes the maximum amount of funeral benefit payable and there is a lack of uniformity in the Acts in this respect, the maximum amount payable in New South Wales being £200, Victoria £100, Queensland £200, South Australia £50, Western Australia £300 and Tasmania £100. The amount of ordinary funeral benefit provided under the rules of the numerous societies in each State also varies to a considerable extent, the minimum amount payable on the death of a male member usually being £20 and the maximum benefit in a few instances being £100; the average ordinary funeral benefit, however, is about £35. If the wife of a member predeceases her husband, a funeral benefit of from £10 to £15 is paid to the member in some societies, whilst in a few instances of benefit of from £3 to £5 is paid on the death of the member's child. The total expenditure of friendly societies in Australia during the year 1922 in respect of funeral benefits was £155,949. Several societies provide for the taking of additional funeral benefits up to the maximum provided by the Act by the payment of further contributions. The Victorian Act, however, has only recently been amended and no particulars are as yet available as to the extent to which such amended provisions have been availed of. In New South Wales the extended funeral benefits are very popular in certain societies, as the premiums payable are usually lower than those charged by life assurance companies, owing to the fact that practically no expenses of management are charged by friendly societies against these policies which are practically life assurance policies payable at death and are on much the same basis as those provided by life assurance societies. Provision is made also in some societies whereby a member may by an extra payment draw a portion of the amount of benefit at age sixty. There appears to be a desire that funeral benefits be still further increased and that friendly societies should further enter into the field of life assurance, although the Acts do not at present permit such action being taken. A funeral benefit of £50 is stated as being sufficient to meet the necessities of the circumstances for which it is provided and the statement has been made that it was not the intention that friendly societies should engage in life assurance business. The amount of benefit provided is often on the basis of a graduated scale according to the duration of membership. In other societies funeral benefit is increased on the death of a member by a special levy of from 6d. to 1s. per member, which system is unscientific in its basis and is carried out by the societies of their own accord and shows that the benefit otherwise provided is in these cases considered inadequate. In trade union benefit funds when the receipts do not come up to expectation, the fund has a right to levy on its members for the balance and in such funds especially where there is often a rapid succession of deaths the levies become frequently necessary, as it would be practically impossible to pay death benefits unless such levies were made; although a smaller funeral benefit is paid if death were the result of an accident at work, as the *Workers' Compensation Act* provides a certain sum under those circumstances.

(ii.) *Industrial Assurance.*—At the end of the year 1922 fourteen assurance organizations in Australia were transacting industrial assurance business, the total number of policies in force being 1,061,569 and the total amount assured £35,303,233, representing an annual premium income of £2,087,148. There has been a considerable growth in this class of business in recent years, as is indicated by the fact that at the end of 1917 there were 725,637 policies in force, the amount assured being £17,750,883, representing an annual premium income of £1,094,333. It is a noticeable fact that the annual premiums paid towards industrial assurance policies in Australia amounted to more than the total contributions towards all the benefits of other mutual benefit associations. The operations of industrial assurance societies are restricted to the capital cities and large towns, it being estimated that 80% of the industrial assurance business is in the capital cities. This insurance is usually for small amounts, which in 1922 averaged £33 per policy payable at death or in some cases at the end of a specified period, in return for small weekly premiums, averaging less than 1s. per policy, generally collected by authorized agents at the home and places of business of the policy holders. Most of the industrial assurance organizations in Australia are mutual societies and consequently there is no profit to other than the policy holders. When a profit has resulted on the year's transactions, bonuses are usually issued to holders of policies which have been in operation for a period of five years; such bonuses have averaged from 1% to 2% of the sum insured. The societies operate mostly amongst the industrial section of the population whose incomes are small and are paid weekly and who are unable to pay the annual premiums necessary in connexion with ordinary life assurance. The mortality amongst this section is slightly higher than that for the general population. No medical examination of applicants is required unless the policy is for a large sum, but a restriction is made that during the first six months, unless death is due to accident, only one quarter of the amount assured would be paid and for the second six months half of the amount, the full amount being paid after the policy has been in force for twelve months.

A policy can be terminated at death, maturity, by surrender or exchange for a fully paid up policy issued or by lapsing. The greatest cause of termination of contracts during the early stages of industrial assurance is by lapsing; the smaller the amount assured, the greater the possibility of lapsing, hence the experience of lapses in England is higher than that in Australia. Many factors operate amongst those who take out industrial assurance

policies. Premiums must be paid within a period of four weeks from the date due and if then not paid, the policy automatically lapses, but the policy holder has the right to revive the policy at any time during a period of twelve months from the date of such lapse, subject to certain limitations. Of every thousand entrants into industrial assurance in 1918 in one industrial assurance society in Australia, two hundred and eighty-nine lapsed in the first year, ninety-one in the second year, forty-four in the third, twenty-five in the fourth and twenty-two in the fifth or a total of four hundred and seventy-one, equivalent to 47.1%, lapsed within five years. Another society had 28% lapses in the first three months, 13% in the second three months, 6% in the second half of the first year, 5.3% in the second year, 3.7% in the third year, 3.0% in the fourth year and 2.5% in the fifth year or a total lapse rate of 61.5% within five years. This clearly shows that lapsed policies represent a considerable waste of effort.

It has been stated that industrial assurance has not interfered very much with the work of friendly societies and that industrial life assurance aims in a measure at compensating the loss of the breadwinner as well as making provision for the children. Industrial assurance societies insure infants from one month old upwards, about 40% of the policies in one large society being issued on lives of children under age of five years and about 11% for those between the ages of six and fifteen years. During the first year of life mortality amongst children is high, after one year of age there is a considerable improvement in the mortality rate and when a child has reached five years of age the expectation of life is good and any lapse which takes place thereafter, is of benefit to the society and is regarded as a set-off against losses arising from lapses in the earlier years. The cost of management of one industrial assurance society in Australia totalled 31.5% of the premium income; in another the expense rate was 33%; the expense rate in another instance increased from 34.1% to 43% in a period of three years, owing to the increased cost of obtaining new business. As the societies are now writing larger policies than formerly, there is generally an average reduction in the expense rate, but the system under which premiums are collected by agents necessarily results in a very heavy percentage of expenditure on administration.

At the end of 1922 there were 245,728 ordinary whole-life policies in force in Australia, the total sum assured being £102,921,179, the average sum assured per policy being £419. The endowment assurance policies totalled 461,616 for a total sum assured of £82,514,293, the average per policy being £179. Other assurance policies totalled 8,392, for a total sum assured of £4,882,161, the average per policy being £582 and pure endowment policies 54,157, for a total of £6,527,177 assured or an average of £121 per policy. The total number of policies for all classes was 769,893, for a total sum assured of £196,844,810 or an average sum assured per policy of £256. As many policy holders have more than one policy, the average amount of assurance per policy holder would be higher than the average per policy shown by these figures. At the end of 1922 the sum assured by 769,893 ordinary and 1,061,569 industrial policies combined totalled £232,000,000, equivalent to approximately £41 per head for the population of Australia and in addition the great majority of the 524,000 friendly society members were contributing for the funeral benefits provided by the various friendly societies.

Funeral Benefit Recommended.

In view of the above-mentioned statistics, the same necessity for the provision of a funeral benefit under national insurance does not exist as in the case of other benefits under consideration. The provision of a funeral benefit, however, would guarantee a definite benefit in respect of those insured members who may not become eligible for the other benefits provided. Under national insurance in England no provision is made for the payment of a funeral benefit, but many industrial assurance societies have registered as approved societies under the Act for the administration of health benefits and their total membership represents 44% of the total insured persons in Great Britain.

The following weekly rates of contribution will be required to provide a funeral benefit of £20, £30, £40 and £50 on the death of an insured person, whether the death occurred when the insured member was still contributing or was in receipt of any benefit:

FUNERAL BENEFIT—WEEKLY RATES OF CONTRIBUTION.

Age at Entry.	Males (to Age 65), Per Week.				Females (to Age 60), Per Week.			
	£20 d.	£30 d.	£40 d.	£50 d.	£20 d.	£30 d.	£40 d.	£50 d.
16	1.0	1.5	2.0	2.5	0.9	1.4	1.8	2.3
17	1.0	1.5	2.1	2.6	0.9	1.4	1.9	2.4
18	1.1	1.6	2.1	2.7	1.0	1.5	2.0	2.5
19	1.1	1.7	2.2	2.8	1.0	1.5	2.0	2.6
20	1.1	1.7	2.3	2.9	1.1	1.6	2.1	2.7
21	1.2	1.8	2.4	3.0	1.1	1.7	2.2	2.8
22	1.2	1.9	2.5	3.1	1.1	1.7	2.3	2.9
23	1.3	1.9	2.6	3.2	1.2	1.8	2.4	3.0
24	1.3	2.0	2.7	3.3	1.2	1.9	2.5	3.1
25	1.4	2.1	2.8	3.5	1.3	1.9	2.6	3.2
26	1.4	2.2	2.9	3.6	1.3	2.0	2.7	3.3
27	1.5	2.2	3.0	3.7	1.4	2.1	2.8	3.5
28	1.6	2.3	3.1	3.9	1.4	2.2	2.9	3.6
29	1.6	2.4	3.2	4.0	1.5	2.3	3.0	3.8
30	1.7	2.5	3.4	4.2	1.6	2.4	3.1	3.9
31	1.7	2.6	3.5	4.4	1.6	2.5	3.3	4.1
32	1.8	2.7	3.7	4.6	1.7	2.6	3.4	4.3
33	1.9	2.9	3.8	4.8	1.8	2.7	3.6	4.5
34	2.0	3.0	4.0	5.0	1.9	2.8	3.7	4.7
35	2.1	3.1	4.2	5.2	2.0	3.0	3.9	4.9
36	2.2	3.3	4.4	5.4	2.1	3.1	4.1	5.1
37	2.3	3.4	4.6	5.7	2.2	3.2	4.3	5.4
38	2.4	3.6	4.8	6.6	2.3	3.4	4.5	5.7
39	2.5	3.8	5.0	6.3	2.4	3.6	4.8	6.0
40	2.6	4.0	5.3	6.6	2.5	3.8	5.1	6.3
41	2.8	4.2	5.5	6.9	2.7	4.0	5.4	6.7
42	2.9	4.4	5.8	7.3	2.8	4.3	5.7	7.1
43	3.1	4.6	6.1	7.7	3.0	4.5	6.1	7.6
44	3.2	4.9	6.5	8.1	3.2	4.9	6.5	8.1
45	3.4	5.2	6.9	8.6	3.5	5.2	7.0	8.7

The suggestion that a funeral benefit be included in the scheme has been considered and your commissioners are of the opinion that the provision of a funeral benefit is not essential at the inauguration of a national insurance scheme, but may be worthy of further consideration when the experience of the administration of the other benefits can be reviewed.

Child Allowance.

In order to equitably provide for the distinction between the single men, married men without dependants and married men with dependants, a supplementary allowance in respect of each dependent child under age sixteen should be paid to the wage-earner during incapacity resulting from sickness, accident and old age, such allowance to be additional to other benefits receivable by him. The payment of this allowance will remove many anomalies which arise where a flat rate of benefit only is paid and is a necessary extension to any system of national insurance which aims at an equal distribution of the risks and an equal distribution of benefits amongst all wage-earners insured under a collective scheme. The incidence of the burden on the wage-earner when incapacitated for work varies in accordance with the number of his dependent children and national insurance is an especially suitable method of assisting him to make provision to meet future contingencies. The necessity that some satisfactory and adequate distribution of benefits should be made, is shown by the fact that of the male population between ages sixteen and sixty-five in Australia 50% are married and of those married 13% have no children, 15% have one child, 15% have two children, 12% have three children, 10% have four children, 8% have five children and 27% have over five children and obviously it would be anomal-

ous for a flat-rate benefit only to be made available in each instance of incapacitation of the wage-earner. In support of this suggestion it has been stated that the payment of similar allowances during the war in respect of soldiers' children resulted in a very noticeable improvement in the children's health and was also of great assistance in their maintenance.

The weekly rates of contribution required to provide a child allowance of 3s., 4s. and 5s. per week in respect of dependent children under the age of sixteen during the incapacity of the insured member are as follows:

CHILD ALLOWANCE DURING INCAPACITATION—WEEKLY RATES OF CONTRIBUTION.

Age at Entry.	Males (to Age 65), Per Week.		
	3s. d.	4s. d.	5s. d.
16	0.9	1.2	1.5
17	0.9	1.2	1.5
18	0.9	1.3	1.6
19	1.0	1.3	1.6
20	1.0	1.3	1.6
21	1.0	1.3	1.6
22	1.0	1.3	1.7
23	1.0	1.4	1.7
24	1.0	1.4	1.7
25	1.1	1.4	1.8
26	1.1	1.4	1.8
27	1.1	1.5	1.8
28	1.1	1.5	1.9
29	1.2	1.6	1.9
30	1.2	1.6	2.0
31	1.2	1.6	2.1
32	1.3	1.7	2.1
33	1.3	1.7	2.2
34	1.3	1.8	2.2
35	1.4	1.8	2.3
36	1.4	1.9	2.4
37	1.5	2.0	2.5
38	1.5	2.0	2.6
39	1.6	2.1	2.6
40	1.6	2.2	2.7
41	1.7	2.3	2.8
42	1.8	2.4	3.0
43	1.8	2.5	3.1
44	1.9	2.6	3.2
45	2.0	2.7	3.3

Your commissioners recommend that provision be made for a child allowance of 5s. per week in respect of each dependent child under age sixteen to be payable to the insured member when incapacitated for work.

(To be continued.)

Post-Graduate Work.

A COURSE OF CLINICAL WORK IN BRISBANE.

THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION has resolved to hold a post-graduate course in Brisbane from August 3 to August 7, 1925. There will be no set lectures, but Dr. Hume Turnbull has promised to deliver a lecture on one of the evenings during the week. The clinical classes will be held at the various hospitals. Members desiring to attend the course should notify the Honorary Secretary, Dr. R. Marshall Allan, M.C., that they intend to take part and should forward one guinea, the fee for the course. As the Brisbane Exhibition will be held during the week commencing on August 10, 1925, country members are advised to make early application for accommodation. Arrangements are being made to obtain concessions for members attending from the Commissioner of Railways. The necessary forms will be obtainable from the Honorary Secretary. The annual dinner of the Queensland Branch will take place during the week of the course. The following provisional programme has been issued.

Monday, August 3, 1925.

9.0 a.m.—Brisbane Hospital:
Demonstration on diabetes by Dr. Eustace Russell and Dr. J. V. Duhig. (Dr. Duhig may be replaced by one of the resident medical officers of the hospital or the two may act together.)
11.0 a.m.—Hospital for Sick Children:
Demonstration on infantile paralysis and osteomyelitis by Dr. A. V. Meehan.
2.0 p.m.—Mater Misericordiæ Hospital:
Demonstrations in the surgical wards by Dr. E. D. Ahern and members of the surgical staff.

Tuesday, August 4, 1925.

9.0 a.m.—Gynæcological operations.
11.0 a.m.—Brisbane Hospital:
Demonstration of tests of renal function by Dr. S. F. McDonald and Dr. J. V. Duhig.
2.0 p.m.—Brisbane Hospital:
Demonstrations in the medical wards by Dr. Eustace Russell and members of the medical staff.

Wednesday, August 5, 1925.

11.0 a.m.—Demonstrations at various hospitals of tests of renal efficiency for surgical purposes, including cystoscopy, by Dr. A. S. Roe, Dr. M. Graham Sutton, Dr. G. P. Dixon and Dr. C. M. Lilley.
2.0 p.m.—Mater Misericordiæ Hospital:
X-ray demonstrations of chest affections by Dr. A. T. H. Nisbet and Dr. B. L. W. Clarke.
Blood transfusion by Dr. J. J. Power and Dr. J. V. Duhig.

Thursday, August 6, 1925.

9.0 a.m.—Brisbane Hospital:
Demonstration of orthopædic conditions by Dr. A. V. Meehan.
11.0 a.m.—Demonstration of eye affections by Dr. George Thomson, Dr. E. O. Marks and Dr. E. J. McGuinness.
2.0 p.m.—Various Hospitals:
Demonstrations of ear, nose and throat affections.
Demonstration of dermatological conditions by Dr. J. W. Heaslop.
Demonstration of medical electricity by Dr. Lockhart J. Spence.

Friday, August 7, 1925.

9.0 a.m.—Brisbane Hospital and Hospital for Sick Children:
X-ray demonstrations by Dr. Val. McDowall and Dr. A. T. H. Nisbet.
Demonstration in blood transfusion by Dr. A. G. Anderson and Dr. J. V. Duhig.
11.0 a.m.—Brisbane Hospital:
Demonstrations in surgical wards by Dr. J. Mowbray Thomson and members of the surgical staff.
2.0 p.m.—Antenatal Clinic:
Demonstration by Dr. R. Marshall Allan.
Mater Misericordiæ Hospital:
Demonstrations in the medical wards by Dr. P. J. Kelly and members of the medical staff.

Correspondence.

INFANTILE PARALYSIS.

SIR: We are all interested in infantile paralysis just now. Its treatment is of special interest to me and I venture to say that there are two general principles in treatment which are not new, but require more emphasis than they usually get.

These are: (i.) The keeping of the patient at rest in comfort and warmth from the earliest hours of the acute attack until all tenderness has disappeared—a period of about six weeks. By "at rest" one means the enforced, uninterrupted and prolonged rest which can only be secured by utter immobilization in efficient apparatus with the limbs in a position which guards the "key" muscles and maintains balance between opposing muscle groups.

(ii.) Thereafter up till recovery or for two years each patient must be treated as a separate anatomical problem and put through a carefully planned course of muscle re-education on the lines so ably laid down by Colin Mackenzie in his work on "The Action of Muscles." In this we recognize that the patient's volitional effort is the only thing which restores muscle power. First comes the gentle testing to see if the muscle has a flicker of voluntary response in it (remembering it is possible to get voluntary response after oft-repeated attempts in a muscle which did not respond at all at first). Then the careful nursing of that flicker, bearing in mind that a single overstrain will undo the work of a month's rebuilding and several overstrains may ruin the muscle altogether. Then comes the gradual leading up to fuller function by a "stairway of a hundred steps."

These are the fundamental principles—to subtract from them is to fail in one's duty, to add to them (for example massage, excepting the lightest friction, or electrical stimulation) is often dangerous and always unnecessary.

I make bold to say that if they were applied with skill and patience to every case we should see the majority restored within two years or less to full or nearly full function, leaving only a minority to be dealt with by orthopædic operations and apparatus.

Yours, etc.,

E. B. M. VANCE.

159, Macquarie Street, Sydney,
April 14, 1925.

A CURIOUS INJURY.

SIR: An Officer of this Department saw me for advice and I referred him for treatment for a burn of a very curious origin. It appeared so unique as to be worthy of record.

He was engaged disconnecting an electric battery (six volt "Exide") from his motor car. The small all-metal spanner, placed round the nut on the positive pole, which was held in his left hand, slipped and came against the inside of a gold signet ring on his little finger. At this instant the part of the ring on the outside of his finger touched a copper petrol pipe. Though he felt no electric shock, his gold ring fused partly and he received a severe burn right through the full depth of the skin and when seen four days later, he had a circular ulcer round his little finger corresponding to the ring.

Examination of the ring shows a gap with fused edges through three-fourths of the thickness on the inside at the contact with the spanner and a small fused depression on the outside where the ring came in contact with the petrol pipe. The inside gap corresponds to a soldered junction where the ring had been reduced in size some years ago.

Yours, etc.,

HARVEY SUTTON,
Principal Medical Officer.

Department of Education, Sydney,
April 20, 1925.

RATIONAL FEEDING IN TYPHOID FEVER.

SIR: In view of the recent discussion as to solid feeding in typhoid, I would like to direct attention to a paper of mine read at the Australian Medical Congress, Brisbane, in 1899, which at the time called forth considerable criticism.

In this paper I pointed out that the tongue never lies except in health and that the condition of the tongue was an even better indication of the condition of the patient than temperature.

The following extract from *The Lancet* in the year 1906, written whilst a medical officer of the Egyptian Quarantine Service, from the Hedjaz Pilgrimage Quarantine Camp at El Tor, in the Sinai Peninsula, may be of interest as showing that the recent idea of more rational feeding in typhoid is not so new as some supposed:

> Having in the summer of 1895 heard the advantages of solid feeding ably advocated by Dr. Barrs at the Leeds Infirmary, I lost no opportunity of observing its effects. At Cambois, Northumberland, in 1898 I began feeding a patient suffering from typhoid fever with food other than the orthodox three pints of milk a day, irrespective of the fact that the temperature was above normal.
>
> On the first indication of a cleaning tongue and an emphatically affirmative answer to the request, "Are you hungry?" I made it a routine practice to give tripe well boiled. This, probably the most easily digested of all solid foods, was followed next day with "boily," the local name for a basin of small pieces of bread boiled in milk, lightly boiled eggs, white fish, mashed potatoes and gravy. Jaffa oranges without pips when obtainable were also given. It was soon remarked at the colliery that these cases of typhoid recovered more rapidly than formerly. Not only were they able to get up at the end of the seventh week, but in some cases even to return to the hard work of hewing coal within three months of the attack.
>
> It was rather amusing the following year to hear at Ashington, a neighbouring large colliery, that the local tripe vendor was in the habit of quoting the Cambois doctor in advancing the sale of this cheap article of food.
>
> At the request of Dr. J. M. Mason, editor of *The New Zealand Medical Journal*, I published an article on rational feeding in typhoid in the initial issue of that magazine in October, 1900, referring to the pioneer work of Dr. Barrs and recording my own experiences with a series of twenty-two cases in private practice. With regard to Dr. F. J. Smith's reference to the South African campaign, I can testify that with Plumer's column during the last twelve months there was not a single death from enteric fever whilst on trek, although as the death-rolls of some of our colonial contingents show, such occurred afterwards. Thus, in my own regiment, the Sixth New Zealand Mounted Rifles, there were twelve deaths at the base hospitals.
>
> It is only fair to state, however, that never did any case of enteric fever remain with the column more than a fortnight at the outside. Although the custom was to adhere as closely as possible to routine feeding with milk, many field hospitals like ours even sometimes having cows attached to them, on one occasion, while taking a large sick convoy chiefly composed of enterics into Charlestown early in February, 1902, some of them ate tinned chicken without any immediate ill-effect.
>
> In February and March of this (1906) year, during a severe epidemic of bacillary dysentery, we found the cases did much better when one did not adhere too strictly to a milk or liquid diet.

Although during the last twenty (20) years, fortunately for the patients and unfortunately financially for myself, it has not been my province to treat cases of typhoid. I have noticed that gradually the old idea that three pints of milk a day and a good nurse was the treatment for typhoid, has given place to a system based on more rational therapeutics and dietetics.

One appreciates the modern recognition of a commonsense diet in typhoid with the addition of vitamin containing food, especially when in 1895 on being asked by the late Professor David Finlay, of Aberdeen, in the final oral in medicine as to the treatment of typhoid, one had the temerity to quote Dr. Barrs's method in the Leeds Infirmary and had consequently to return for reexamination in medicine at a later date.

Yours, etc.,

J. S. PURDY,

Metropolitan Medical Officer of Health.
103 Queen Victoria Building, Sydney.
April 1, 1925.

Obituary.

MALCOLM LESLIE CAMERON.

It is with regret that we have to announce the death of Malcolm Leslie Cameron which occurred at Brisbane on April 27, 1925.

Born 70 years ago in London, Ontario, Canada, of Scotch Canadian parents, Malcolm Leslie Cameron was educated at Toronto University. He subsequently gained a scholarship at Edinburgh University and obtained a diploma of licentiate of the Royal College of Physicians and the Royal College of Surgeons of Edinburgh in 1881, he also obtained the degree of bachelor of medicine and doctor of medicine of Toronto University. After practising for a few years in the town of his birth he went to New Zealand where he stayed for fifteen months. He then went to New South Wales and took up practice in the Manning River district. Eighteen years ago he settled in Brisbane and practised there till the time of his death. Malcolm Leslie Cameron was a successful practitioner and endeared himself to a wide circle of patients and friends who will feel much sympathy for his wife, three sons and two daughters.

NOTICES.

A meeting of the Section of Psychiatry and Neurology of the Victorian Branch of the British Medical Association will be held on May 18, 1925, at the Mental Hospital, Royal Park, Melbourne, at eight o'clock p.m. Dr. De Witt Henty will show some patients. All members of the Branch are invited to be present.

LIST OF MEMBERS.

Our attention has been drawn to a mistake in connexion with the name of Dr. F. J. Burns, of Tatura, Victoria, which was incorrectly printed in last week's issue.

We have been requested to announce that the entry, Dr. Robert M. Shaw, of Main Road, Mordialloc, in the list of members of the Victorian Branch should have prefixed to it crossed swords indicating war service.

The name of Dr. D. T. Rushton Smith, of Clifton, Queensland, does not appear in the list of members of the Queensland Branch. Dr. Rushton Smith was transferred to the New South Wales Branch in January, 1925.

Medical Appointments.

Dr. Robert John Stevenson (B.M.A.) has been appointed Medical Inspector of Seamen at the port of Thevenard, South Australia.

* * * *

Dr. A. W. St. Ledger (B.M.A.) has been appointed Deputy Quarantine Officer, Brisbane.

* * * *

Dr. O. W. Mater (B.M.A.) has been appointed Deputy Quarantine Officer, Thursday Island.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi..

Adelaide Children's Hospital: Honorary Bacteriologist and Pathologist.

Children's Hospital, Carlton, Victoria: Assistant Pathologist.

Royal Prince Alfred Hospital, Sydney: Vacancies on the Honorary Medical Staff.

St. Vincent's Hospital, Sydney: Honorary Physician to In-Patients and Two Honorary Physicians to Out-Patients.

Medical Appointments: Important Notice.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
New South Wales: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellow's Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
Victorian: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
Queensland: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
South Australian: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
Western Australian: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
New Zealand (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

May 19.—Tasmanian Branch, B.M.A.: Council.
May 19.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
May 19.—Illawarra Suburbs Medical Association, New South Wales.
May 20.—Western Australian Branch, B.M.A.: Branch.
May 21.—South Australian Branch, B.M.A.: Council.
May 22.—Queensland Branch, B.M.A.: Council.
May 26.—New South Wales Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
May 27.—Victorian Branch, B.M.A.: Council.
May 28.—New South Wales Branch, B.M.A.: Branch.
May 28.—South Australian Branch, B.M.A.: Branch.
May 29.—South Eastern Medical Association, New South Wales.
June 2.—Tasmanian Branch, B.M.A.: Council.
June 3.—Victorian Branch, B.M.A.: Branch.
June 3.—Section of Obstetrics and Gynæcology, New South Wales Branch, B.M.A..
June 4.—Section of Orthopædics, New South Wales Branch, B.M.A..
June 5.—Queensland Branch, B.M.A.: Branch.
June 8.—Northern District Medical Association, New South Wales.
June 9.—Tasmanian Branch, B.M.A.: Branch.
June 9.—New South Wales Branch, B.M.A.: Ethics Committee.

Editorial Notices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to The Medical Journal of Australia alone, unless the contrary be stated.

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